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ABSTRACT

The passage of the Carl D. Perkins Vocational and Applied Technology Education Amendments of 1998 (Perkins III) and the Workforce Investment Act of 1998 (WIA) marked a new era in the performance accountability partnership among the states, the U.S. Department of Education, and the U.S. Department of Labor (DOL). Evaluation of vocational education programs' performance is now characterized by quality management principles promoted by the Baldrige National Quality Program and the International Organization for Standardization. The following are among the key elements of the accountability process mandated by Perkins III and WIA: (1) identification of the customers and purposes for performance data; (2) the Office of Vocational and Adult Education's Data Quality Initiative; (3) principles of outcome-based performance review; and (4) application of quality management principles to the Data Quality Initiative. A review of recent federal- and state-level evaluation initiatives reveals that outcome-based performance measurement systems consist of the following core

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components: (1) a clear goal statement; (2) valid and reliable measurement; (3) standards adjusted for "relevant" differences in circumstances; and (4) performance-based consequences. Before undertaking the design of a high-quality performance measurement system, stakeholders must agree that relevant program activities and reliable performance measures can be linked in a practical way. (Contains 43 references.) (MN)

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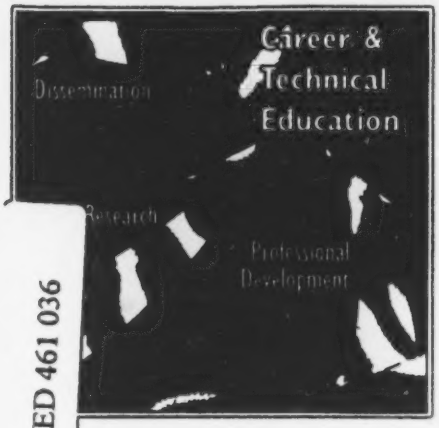

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21st Century Accountability: Perkins III and WIA

David W. Stevens

Information Paper 1002

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Foreword

The Information Synthesis Project of the National Dissemination Center for Career and Technical Education seeks to assist career and technical education practitioners and policymakers in choosing and using the best information available to apply to practice and to serve as an intermediary between local and expert knowledge. This paper is the second in the Information Paper series, which is designed to review and synthesize research by giving an overview of a distinct topic or a cross-disciplinary analysis of an emerging topic.

David W. Stevens is a consultant to the current National Assessment of Vocational Education (NAVE) team and to the Program Reform Branch, Division of Vocational-Technical Education, Office of Vocational and Adult Education, U.S. Department of Education. He also manages a research alliance sponsored by the Office of Policy and Research, Employment and Training Administration, U.S. Department of Labor. His contributions to previous NAVE work include "Assessing the Impact of the Carl D. Perkins Vocational Education Act: Economic Development Issues" (1987) and "Occupations and Earnings of Former Vocational Education Students: Design Issues" (1992). He is the author of "Vocational Education Accountability in a Block Grant World" in ***Of Heart and Mind: Social Essays in Honor of Sar Levitan*** (Upjohn 1996) and ***New Perspectives on Documenting Employment and Earnings Outcomes in Vocational Education*** (NCRVE 1996).

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Floyd L. McKinney
Director
National Dissemination Center
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Executive Summary

The performance accountability partnership among the states, the U.S. Department of Education, and the U.S. Department of Labor entered a new era with the passage of the Carl D. Perkins Vocational and Applied Technology Education Amendments of 1998 (Perkins III) and the Workforce Investment Act of 1998 (WIA). Quality management principles promoted by the Baldrige National Quality Program and the International Organization for Standardization characterize this new era.

This paper addresses the application of these performance excellence criteria to the Perkins III performance measurement process. It begins with a description of Perkins III and WIA core indicators of performance, placing them in the historical context of 20th-century federal accountability for vocational-technical education in order to explain the current emphasis on compatibility among federal performance information systems.

Following a review of major vocational education and work force development legislation and assessments, the heart of the paper is a discussion of Perkins III and WIA Title I and Title II accountability processes, including–

- Identification of the customers and purposes for performance data
- The Office of Vocational and Adult Education's Data Quality Initiative
- Principles of outcome-based performance review
- The application of quality management principles to the Data Quality Initiative

An example of a state model for performance data collection is described.

The paper concludes with a look at the future of accountability in career and technical education and work force development, touching on ways in which performance measurement practices may differ in the 21st century.

Introduction

A new generation of the performance accountability partnership among the states, the U.S. Department of Education, and the U.S. Department of Labor began with passage of the Carl D. Perkins Vocational and Applied Technology Education Amendments of 1998 (Perkins III) and the Workforce Investment Act of 1998 (WIA). Quality management principles promoted by the Baldrige National Quality Program (www.quality.nist.gov) and the International Organization for Standardization (www.iso.ch) characterize this new era.

This paper begins with a description of the Perkins III and WIA core indicators of performance. These requirements are placed in historical context in chapter 3. Basic quality management principles are used in chapter 4 to identify opportunities to improve performance through management adoption of refined measurement practices. Concluding observations about the future of education and work force development accountability are offered in chapter 5.

Newcomers to career and technical education, work force development, and adult education accountability are introduced to similarities and differences in the federal core indicators that have been developed for Perkins III and WIA Title I (Workforce Investment Systems) and Title II (Adult Education and Literacy). Those who are new to local and state performance accountability responsibilities are challenged in chapters 4 and 5 to look beyond core indicators. Chapter 4 highlights the federal-state partnership that is identifying exemplary state performance measurement practices and investing in forums to bring these innovations to the attention of other state and local colleagues.

A balanced treatment of secondary and higher education performance indicators and issues is offered here. The evolution of Tech Prep from a basic 2+2 articulation of high school and community college coursework into diverse approaches including middle school and college components has increased the importance of aligning secondary and higher education performance indicators and the information systems that produce them.

A basic theme throughout this paper is that public release of core indicator information for Perkins III and WIA Title I and Title II will increase public and media interest in other aspects of program performance. Many of today's management information systems do not contain the data needed to respond to the expected questions. Other information systems do contain the necessary data, but are not designed to make this information available quickly and at low cost.

Quality Management Principles

Attainment of a high level of performance quality requires a high standard of management quality. This, in turn, requires high-quality performance measurement. An accurate understanding of today's performance is needed to pursue future improvement.

The International Organization for Standardization (ISO) Principles

Two of the ISO principles for assessing quality management standards are highlighted here and in chapter 4.

1. **Continual improvement**—employing a consistent organization-wide approach to continual improvement of the organization's performance; providing people with training in the methods and tools of continual improvement; making continual improvement of products, processes, and systems an objective for every individual in the organization; establishing goals to guide and measures to track continual improvement; and recognizing and acknowledging improvements.

2. **A factual approach to decision making**—ensuring the data and information are sufficiently accurate and reliable; making data accessible to those who need it; analyzing data and information using valid methods; and making decisions and taking action based on factual analysis, balanced with experience and intuition.

The remaining six ISO quality management principles are customer focus, leadership, involvement of people, process approach, system approach to management, and mutually beneficial supplier relationships. Each of the eight principles is used in chapter 4 as a framework for an assessment of the federal-state performance measurement partnership under Perkins III.

The Baldrige National Quality Program Education Criteria

The *Education Criteria for Performance Excellence* volume released by the Baldrige National Quality Program (U.S. Department of Commerce 2000) contains seven criteria. Two of these are of particular interest here (ibid., p. 27):

1. **Information and analysis**—examining an organization's performance measurement system and how the organization analyzes performance data and information. This includes the selection of indicators and evidence of their use and effectiveness in daily operations, information reliability, an understanding of improvement options, projections of data to support planning, and steps taken to keep the performance measurement system current with service needs and directions.

2. **Student performance results**—segmented by student groups as appropriate, and including appropriate data relative to comparable organizations and student populations. The question to be answered is: What are your current levels and trends in key measures and/or indicators of student performance?

The remaining five Baldrige education criteria for judging performance excellence are leadership, strategic planning, student and stakeholder focus, faculty and staff focus, and educational and support process management.

The Baldrige criteria complement the ISO quality management principles, as both are used in chapter 4 to assess the federal-state performance measurement partnership under Perkins III. A related document has just been released: ***Measuring Quality: Choosing among Surveys and Other Assessments of College Quality*** (Borden and Owens 2001).

Two preliminary steps must be taken before the Baldrige and ISO performance excellence criteria are applied to the Perkins III performance measurement process in chapter 4. The core indicators of performance for Perkins III and WIA Title I and Title II are introduced with limited commentary in the next chapter. Historical perspectives on accountability processes in career and technical education and work force development follow.

Perkins III and WIA Title I and Title II Core Indicators of Performance

A logical first step in an examination of 21st-century accountability issues is to document what is required today. That is the topic covered in this chapter. These core indicator requirements are placed in historical perspective in the next chapter. The content of these two chapters is needed as background for understanding the quality management interpretation that is given to the Perkins III federal-state accountability partnership in chapter 4.

The Perkins III core indicators are covered first, followed by the WIA Title I measures and then the WIA Title II core indicators. Each set of indicators is prefaced by a brief description of the performance accountability goal found in each of the laws.

Perkins III

Perkins III, Section 2, states the purpose of the act:

> The purpose of this Act is to develop more fully the academic, vocational, and technical skills of secondary students and postsecondary students who elect to enroll in vocational and technical education programs.

The purpose of the act is to be achieved by—

> (1) building on the efforts of States and localities to develop challenging academic standards; (2) promoting the development of services and activities that integrate academic, vocational, and technical instruction, and that link secondary and postsecondary education for participating vocational and technical education students; (3) increasing State and local flexibility in providing services and activities designed to develop, implement, and improve vocational and technical education, including tech-prep education; and (4) disseminating national research, and providing professional development and technical assistance, that will improve vocational and technical education programs, services, and activities.

Two sections of Perkins III contain the performance accountability expectations of the 1998 amendments. Section 113 defines state performance accountability requirements and opportunities. Section 114 describes national performance reporting responsibilities.

State Responsibilities (Section 113)

The goal for state performance accountability is—

> to assess the effectiveness of the State in achieving statewide progress in vocational and technical education, and to optimize the return of investment of Federal funds in vocational and technical education activities. (Section 113(a))

Section 113(a) begins:

> The purpose of this section is to establish a State performance accountability system, comprised of the activities described in this section.

Section 113(b)(2)(C) offers an alternative approach:

> If a State previously has developed State performance measures that meet the requirements of this section, the State may use such performance measures to measure the progress of vocational and technical education students.

Three basic activities comprise a state's performance accountability system:

1. Core indicators of performance, which are described in Section 113(b)(2)(A)
2. Any additional, or discretionary, indicators of performance that might be identified
3. A state adjusted level of performance for each of the core indicators and a state level of performance for each additional indicator that has been identified

The Core Indicators of Performance (Section 113(b)(2)(A))

The minimum measures that each state must identify to satisfy the core indicators of performance requirement are as follows:

1. Student attainment of challenging state-established academic and vocational and technical, skill proficiencies
2. Student attainment of a secondary school diploma or its recognized equivalent, a proficiency credential in conjunction with a secondary school diploma, or a postsecondary degree or credential
3. Placement in, retention in, and completion of, postsecondary education or advanced training, placement in military service, or placement or retention in employment
4. Student participation in and completion of vocational and technical education programs that lead to nontraditional training and employment

The Office of Vocational and Adult Education (OVAE) in the U.S. Department of Education has translated these 4 core indicators of performance into 14 subindicators, which were released in a January 2000 document titled ***Core Indicator Framework***. More information about this framework and the subindicators can be found in chapter 4.

Additional Indicators of Performance (Section 113(b)(2)(B))

Each state is offered an opportunity to broaden the portfolio of performance indicators beyond the required core indicators described here. The core indicators of performance in Section

113(b)(2)(A) are described as minimal required evidence of progress. A state may choose to supplement the core indicator evidence with additional information.

"Progress" and the Levels of Performance Issue (Section 113(b)(3)(A)(i) and (vi))

Section 113(b)(3)(A)(i) defines state responsibilities for selection of a target performance level for each of the core indicators:

> The levels of performance established under this subparagraph shall, at a minimum—(I) be expressed in a percentage or numerical form, so as to be objective, quantifiable, and measurable; and (II) require the State to continually make progress toward improving the performance of vocational and technical education students.

Measurement of progress requires the definition of a start time and an end time and the calculation of indicator values for each of these times. Typically, these are not independent decisions.

Section 113(b)(3)(A)(vi) provides an incentive for states to exchange information:

> The agreement [between a State and the Secretary of Education] shall take into account—(I) how the levels of performance involved compare with the State adjusted levels of performance established for other States taking into account factors including the characteristics of participants when the participants entered the program and the services or instruction to be provided; and (II) the extent to which such levels of performance promote continuous improvement on the indicators of performance by such State.

Each annual cycle of state performance accountability can be thought of as climbing through progressively higher base camps in preparation for a final successful assault on a mountain top, except the continuous progress requirement assumes that the altitude of the peak is rising—one can never expect to reach the top. There will always be a new challenge to pursue.

State Reporting (Section 113(c)(1))

Each state is required to—

> annually prepare and submit to the Secretary [of Education] a report regarding—(A) the progress of the State in achieving the State adjusted levels of performance on the core indicators of performance; and (B) information on the levels of performance achieved by the State with respect to the additional indicators of performance, including the levels of performance for special populations.

The core indicators of performance, expressed in a percentage or numerical form, and special population performance information must be included in a state's annual report, as must additional indicators if they have been included in a state's plan in accordance with Section 113(b)(2)(B).

State Responsibilities: A Summary Statement

This concludes an overview of state responsibilities and opportunities for Perkins III performance accountability reporting, as these are defined in Section 113 of the act. Section 113 offers wide latitude to use existing state performance accountability systems if these satisfy core indicator reporting requirements.

Federal Responsibilities (Section 114)

Section 114(a)(1) and (2) define the Secretary's basic responsibilities for Perkins III performance accountability reporting:

> (1) The Secretary shall collect performance information about, and report on, the condition of vocational and technical education and on the effectiveness of State and local programs, services, and activities carried out under this title in order to provide the Secretary and Congress, as well as Federal, State, local, and tribal agencies, with information relevant to improvement in the quality and effectiveness of vocational and technical education. The Secretary annually shall report to Congress on the Secretary's aggregate analysis of performance information collected each year pursuant to this title, including an analysis of performance data regarding special populations.
>
> (2) Compatibility—The Secretary shall, to the extent feasible, ensure that the performance information system is compatible with other Federal information systems.

The Secretary is obliged to collect information that is relevant to improvement, must perform an aggregate analysis of performance information collected, and is instructed to strive for compatibility with other federal information systems to the extent feasible. Prominent among these other federal information systems are WIA Title I and Title II performance indicator systems.

WIA Title I

The stated purpose of the Workforce Investment Act of 1998, Title I, Workforce Investment Systems, is found in Section 106:

> The purpose of this subtitle is to provide workforce investment activities, through statewide and local workforce investment systems, that increase the employment, retention, and earnings of participants, and increase occupational skill attainment by participants, and, as a result, improve the quality of the workforce, reduce welfare dependency, and enhance the productivity and competitiveness of the Nation.

Services Offered

The services to achieve the act's purpose are defined in Section 134(d)(1). Three basic categories of service are available to eligible adults and dislocated workers—core services, intensive services, and training services.

1. **Core Services**. These include eligibility determination; outreach, intake, and orientation to the information and other services available through the one-stop delivery system; initial assessment of skill levels, aptitudes, abilities, and supportive service needs; job search and placement assistance: and where appropriate, career counseling.

2. **Intensive Services**. These include comprehensive and specialized assessments of the skill levels and service needs of adults and dislocated workers; development of an individual employment plan; group counseling; individual counseling and career planning; case management for participants seeking training services; and short-term prevocational services, including development of learning skills, communication skills, interviewing skills, punctuality, personal maintenance skills, and professional conduct, to prepare individuals for unsubsidized employment or training.

3. **Training Services**. These may include occupational skills training, including training for nontraditional employment; on-the-job training; programs that combine workplace training with related instruction, which may include cooperative education programs; training programs operated by the private sector; skill upgrading and retraining; entrepreneurial training; job readiness training; adult education and literacy activities provided in combination with services described above; and customized training conducted with a commitment by an employer or group of employers to employ an individual upon successful completion of the training.

Performance Accountability (Section 136)

The stated purpose of the WIA Title I performance accountability system is—

> to establish a comprehensive performance accountability system, comprised of the activities described in this section, to assess the effectiveness of States and local areas in achieving continuous improvement of workforce investment activities funded under this subtitle, in order to optimize the return on investment of Federal funds in statewide and local workforce investment activities.

Section 136(b)(1) requires that state performance measures consist of—

- Core indicators, which are defined in Section 136(b)(2)(A)
- A customer satisfaction indicator, which is defined in Section 136(b)(2)(B)
- Additional indicators of performance (if any) identified by the state
- A state-adjusted level of performance for each core indicator

The Title I Core Indicators of Performance (Section 136(b)(2)(A))

There are 17 Title I core measures of performance:

- Adult entered employment rate
- Adult employment retention rate
- Adult earnings change

- Adult employment and credential rate
- Dislocated worker entered employment rate
- Dislocated worker employment retention rate
- Dislocated worker earnings replacement rate
- Dislocated worker employment and credential rate
- Older youth (eligible youth aged 19-21 at registration) entered employment rate
- Older youth employment retention rate
- Older youth earnings gain rate
- Older youth credential rate
- Younger youth (eligible youth aged 14-18 at registration) skill attainment rate (not an "exit" measure)
- Younger youth diploma or equivalent attainment rate
- Younger youth retention rate
- Customer satisfaction—two indices, calculated from survey data collected from participants and employers (who participated in On-the-Job Training, Rapid Response, or Labor Exchange activities)

WIA subpopulation definitions require careful attention. Section 101 of the act defines "adult" as an individual who is age 18 or older, with two exceptions for allocation of federal funds to the states:

1. Section 127(b)(2) defines a "disadvantaged youth" as an individual age 16 through 21 who received an income, or is a member of a family that received a total family income, that, in relation to family size, does not exceed the higher of—(i) the poverty line; or (ii) 70 percent of the lower living standard income level.

2. Section 132(b)(v) defines "adult" as an individual who is not less than 22 and not more than age 72.

Section 101 defines an "eligible youth" as an individual who is not less than age 14 and not more than age 21; is a low-income individual; and is an individual who is one or more of the following: deficient in basic literacy skills; a high school dropout; homeless, a runaway, or a foster child; pregnant or a parent; an offender; or an individual who requires additional assistance to complete an educational program, or to secure and hold employment. This definition does not apply to subtitle C (Job Corps) and subtitle D (National Programs).

WIA Title II

The Workforce Investment Act of 1998, Title II, Adult Education and Literacy, statement of purpose is—

> to create a partnership among the Federal Government, States, and localities to provide, on a voluntary basis, adult education and literacy services, in order to—(1) assist adults to become literate and obtain the knowledge and skills necessary for employment and self-sufficiency; (2) assist adults who are parents to obtain the educational skills necessary to become full partners in the educational development of

their children; and (3) assist adults in the completion of a secondary school education.

Services Offered

The definition of "adult education" is services or instruction below the postsecondary level for individuals—(A) who have attained 16 years of age; (B) are not enrolled or required to be enrolled in secondary school under state law; and (C) who—(i) lack sufficient mastery of basic educational skills to enable the individuals to function effectively in society; (ii) do not have a secondary school diploma or its recognized equivalent, and have not achieved an equivalent level of education; or (iii) are unable to speak, read, or write the English language.

Performance Accountability

The stated purpose of the Title II performance accountability system, in Section 212, is—

> to establish a comprehensive performance accountability system, comprised of the activities described in this section, to assess the effectiveness of eligible agencies in achieving continuous improvement of adult education and literacy activities funded under this subtitle, in order to optimize the return on investment of Federal funds in adult education and literacy activities.

The eligible agency performance measures are core indicators of performance, additional indicators of performance (if any) identified by the eligible agency, and an eligible agency adjusted level of performance for each core indicator.

The Title II Core Indicators of Performance (Section 212(b)(2)(A))

The core indicators shall include the following:

- Demonstrated improvements in literacy skill levels in reading, writing, and speaking the English language, numeracy, problem solving, English language acquisition, and other literacy skills
- Placement in, retention in, or completion of postsecondary education, training, unsubsidized employment, or career advancement
- Receipt of a secondary school diploma or its recognized equivalent

For each eligible agency submitting a state plan, there shall be established levels of performance for each of the core indicators of performance. The levels of performance shall, at a minimum, be expressed in objective, quantifiable, and measurable form and show the progress of the eligible agency toward continuously improving in performance.

Compatibility of Perkins III and WIA Title I and Title II Performance Information Systems

Before introducing an historical perspective on vocational and technical education and work force development accountability in the next chapter, it is important to consider why Perkins III, Section 114(a)(2), requires the Secretary of Education to ensure, to the extent feasible, that the Perkins III performance information system is compatible with other federal information systems. One possible reason is to limit each state's reporting burden and costs. Another possible reason is to permit comparisons to be made among state programs that receive federal funds under Perkins III and WIA Title I and Title II.

If the basic reason for seeking performance information system compatiblity is state and federal cost containment, it is important to consider what information of strategic management value might be lost in pursuing compatibility. If the fundamental reason for seeking performance information system compatibility is to enable a comparison of performance across federally funded programs, it is important to consider the objective of such comparisons.

The purpose of Perkins III is "to develop more fully the academic, vocational, and technical skills of secondary students and postsecondary students who elect to enroll in vocational and technical programs."

The purpose of WIA Title I is "to provide workforce investment activities...that increase the employment, retention, and earnings of participants, and increase occupational skill attainment by participants, and, as a result, improve the quality of the workforce, reduce welfare dependency, and enhance the productivity and competitiveness of the Nation."

The purpose of WIA Title II is "to assist adults to become literate and obtain the knowledge and skills necessary for employment and self-sufficiency...and to become full partners in the educational development of their children."

The stated purposes of Perkins III and WIA Title I and Title II complement each other. The circumstances of the subpopulations served are quite different at the time of participation in one of the federally funded activities. The immediate program objectives are strikingly different, too. These conclusions suggest that pursuit of a federal capability to compare performance across Perkins III and WIA Title I and Title II is not a basic motivation for seeking compatibility of performance accountability systems across programs. This leaves state cost containment as a likely candidate for the source of the Perkins III, Section 114(a)(2) requirement that the Secretary of Education ensure compatibility to the extent feasible.

This chapter introduces the Perkins III and WIA Title I and Title II accountability goals and core indicators of performance. Chapter 3 explores whether there was a trend toward more, or less, rigorous federal performance measurement requirements leading up to Perkins III and WIA.

Historical Perspective

This chapter seeks to provide a basic understanding of 20th-century federal accountability for vocational and technical education and work force development programs. This background information is expected to be useful for those who may have opportunities to influence the next cycle of 21st-century performance reporting, including continuing implementation of the core indicators described in chapter 2. Only views about accountability issues are included here. Readers interested in vocational education history per se are referred to Lazerson and Grubb (1974) and Giordano-Evans (1975).

Pre-1960

The historical coverage begins with excerpts from a paper co-authored by Rupert N. Evans and Paul Violas (1983):

> The early history of proposals for vocational education is full of expected outcomes for such programs. Rarely, however, were there proposals that these outcomes be tested, let alone suggestions as to *how* they should be tested....Almost all of the emphasis was on assessing process rather than outcome. (p. 33)
>
> Not until vocational educators began to be trained as researchers in the 1950s was there an emphasis within vocational education on testable outcomes. Even today [1983], most of the emphasis on experimentation comes from outside the field. (p. 34)
>
> One problem with the task [of assessing evidence supporting or rejecting particular outcomes] is that the list of outcomes we were given represents a view of the evaluation of social programs that has not always been held by many people, especially in the early days of vocational education. This view holds that it is desirable to specify in advance the outcome(s) expected of a program in order to determine more easily the extent to which these outcomes have been achieved. (p. 34)
>
> In contrast, the advocates of vocational education have tended to identify problems of society and of individuals and then to specify which of these problems they felt vocational education could solve. (p. 34)
>
> If those who plan and implement an activity seek different outcomes from those who evaluate it, one should not be surprised if the evaluation is negative. (p. 35)
>
> A second major problem is the assumption that all of vocational education does or should have the same outcomes....Now it seems to be assumed by nonvocational educators that all should produce employees. (p. 35)
>
> A third major problem is that our list of eighteen outcomes was developed in 1982 by a group of researchers and policy makers. It clearly does not include some of the important outcomes desired...by practitioners, who are more concerned with maintenance or expansion of enrollments and the solution of other daily problems than with grand designs. (p. 35)

> It would appear that both defenders and critics were reasonably happy to make assumptions about outcomes based on logic, or exhortations, rather than to test outcomes with data. (p. 36)

> From 1917 until 1963 [***Vocational Education Bulletin #1***] was the "Bible" for vocational education programs that received federal funds. It contains absolutely no reference to outcomes other than expenditure of funds for purposes allowed by federal law. (p. 45)

> It is our view that the assessment of outcomes in order to improve individual program decisions is much more desirable and feasible than assessment of a group of disparate programs serving disparate communities and disparate groups of individuals under disparate economic conditions. (p. 50)

The views expressed by these clearly frustrated long-time vocational education practitioners can be summarized in the form of three questions:

1. Should a single list of core indicators be defined for sweeping performance accountability covering the entire set of "vocational and technical education" activities? Twenty years ago, Evans and Violas answered "no." The Perkins III core indicators of performance reflect a qualified "yes."

2. If one believes that a single list of core indicators of performance can be defined, is there a practical way to measure these outcomes to the mutual satisfaction of varied constituencies with different standards of indicator validity and reliability?

3. If doubt is harbored about a practical way to measure outcomes to the mutual satisfaction of varied constituencies, what performance accountability consequences might be expected to flow from sustained disagreement about how to measure statewide progress in vocational and technical education?

The 1960s and 1970s

The Vocational Education Act of 1963 and the Vocational Education Amendments of 1968 introduced fundamental changes in federal funding criteria and targeted populations. The Education Amendments of 1976 contained the first midcentury accountability language.

The 1976 Amendments charged the National Institute of Education with conducting "an analysis of the means of assessing program quality and effectiveness" (National Institute of Education 1979, p. v). Unfortunately, the Institute's ***Final Report*** (1981) warned that—

> the results reported do not constitute, and should not be read as, an assessment of the effectiveness of either secondary or postsecondary vocational education programs. They are too limited—by both data available for research and the difficulty of the research problem—to attribute outcomes, both economic and noneconomic, to particular educational experiences. (p. VII-22)

The 1976 Amendments, Section 164(b)(4)(A), also charged the National Advisory Council on Vocational Education to—

> identify, after consultation with the National Commission for Manpower Policy, the vocational education and employment and training needs of the nation and assess the extent to which vocational education, employment training, vocational rehabilitation, and other programs under this and related Acts represent a consistent, integrated and coordinated approach to meeting such needs. (p. vii)

The challenge to determine whether federal legislation represented a consistent, integrated, and coordinated approach soon became more difficult with passage of the Comprehensive Employment and Training Act Amendments of 1978. The Comprehensive Employment and Training Act of 1973 (CETA) had—

> consolidated under one legislative umbrella a large number of...previously fragmented and specialized efforts and placed primary reliance instead on local levels of government to plan and deliver a more comprehensive set of services. In other words, CETA moved toward decategorization of programs and decentralization of responsibility. Currently, the entire country is divided into 451 "prime sponsorships" (jurisdictions with 100,000 population or more) who have first-line responsibility for operating the program. (National Commission for Manpower Policy 1978, p. 3)

The CETA Amendments of 1978 gave the local prime sponsors control of federal funds to be invested in employment training of economically disadvantaged youths still in school. No presumptive provider of these training services appeared in the amendments, but a prime sponsor was required to use local organizations of "demonstrated effectiveness."

The CETA Amendments of 1978 offered no criteria for assessing a local organization's "demonstrated effectiveness." Furthermore, the CETA funds flowed directly to the local prime sponsors, whereas federal vocational education funds flowed through states to local areas. Limited availability of reliable performance indicators for local vocational education programs opened the door to widespread ignoring of local vocational education programs by the prime sponsors (Stevens 1979).

The block grant era, looked upon with nostalgia by Evans and Violas in 1983, had given way to a flow of federal vocational education funds based largely on concentrations of poverty and an explicit goal to increase earnings. Anecdotal evidence at the time indicated that many vocational educators were concerned about the CETA youth programs because of perceived low standards for program completion and certification of competence.

The 1980s and 1990s

The Carl D. Perkins Vocational Education Act of 1984 (P.L. 98-524)

Section 403 of the 1984 act mandated a National Assessment of Vocational Education. The *Final Report* (Wirt et al. 1989) Executive Summary begins:

> The National Assessment of Vocational Education (NAVE) has studied the implementation of the Carl D. Perkins Act of 1984 and the status of vocational education at the secondary and postsecondary levels. We conclude that the basic goals of increasing the access of special populations to high-quality vocational education and improving the overall quality of programs are sound, but that the legislation is a weak instrument for achieving these goals. (p. vii)

The *Final Report* includes separate secondary and postsecondary policy recommendations for performance indicator improvements.

Secondary Performance Indicators

> Each state would develop performance indicators to measure the success of vocational education for different populations of students and to achieve reform. The indicators would include information on academic achievement, vocational attainment and occupational skills, employment outcomes, and the continuity of student training between secondary and postsecondary levels. States would report on student performance within two years of reauthorization. (ibid., p. xv)

The NAVE *Final Report* authors, John G. Wirt, Lana D. Muraskin, David A. Goodwin, and Robert H. Meyer, proposed that—

> the last component of the secondary policy should be to test alternative ways of linking performance and improvement through allocating resources on the basis of information from indicators. (p. xvi)

Postsecondary Performance Indicators

States would develop indicators of performance of postsecondary institutions. These indicators would measure the performance of postsecondary vocational institutions in three main areas:

1. **Labor Market Outcomes**, including the rates at which students are placed in jobs, whether the placements are 'training related,' the duration of employment and unemployment, and the level of earnings at job entry and selected times thereafter.

2. **Learning Outcomes**, including the rates at which students attain state certification (in fields with certification), achieve occupational competencies, and improve their scores on tests of academic knowledge.

3. **Educational Attainment**, including the rates at which students earn degrees and certificates, takes courses in a sequence, and enroll in more advanced level courses such as intended by Tech Prep or other similar programs. (pp. xix and xx)

The NAVE recommendation for performance funding at the postsecondary level is more direct than the proposal to "test alternative ways of linking performance and improvement through allocating resources on the basis of information from indicators" at the secondary level.

> States would distribute funds from the Perkins Act according to the performance of institutions as measured by the indicators developed. Institutions with excellent performance would receive higher rewards. (p. xx)

Federal Leadership in Educational Reform

The NAVE defined the federal role with respect to vocational education indicators. The vision expressed in this 1989 Final Report is consistent with the overall theme of 21st-century accountability:

> The performance indicators to be developed by the states are intended to encourage reform. The information derived from the indicators is intended to create incentives for reform by provoking questions from vocational education officials, legislators, governors, teachers, students, parents, employers, and others about what vocational education is accomplishing and what it should accomplish. The information will also assist state officials in setting goals and direction for the improvement of vocational education. A critical role for the federal office will be to provide guidance to the states on measurement priorities and expert technical assistance in indicator development. (p. xxi)

The Carl D. Perkins Vocational and Applied Technology Education Act of 1990 (P.L. 101-392)

The language of the 1990 act reflected the 1989 NAVE recommendations. Section 115(a) required that—

> each state board receiving funds under this Act shall develop and implement a statewide system of core standards and measures of performance for secondary and postsecondary vocational education programs.

Section 115(c) further required that—

> in developing the standards and measures included in a system developed under subsection (a), the State board shall take into consideration—(1) standards and measures developed under job opportunities and basic skills training programs established and operated under a plan approved by the Secretary of Health and Human Services...and (2) standards prescribed by the Secretary of Labor under section 106 of the Job Training Partnership Act.

The Job Training Partnership Act of 1982 (JTPA) was the successor to the CETA Amendments of 1978 and the predecessor to the Workforce Investment Act of 1998. The Job Opportunities in the Business Sector (JOBS) initiative targeted welfare recipients who needed basic skills training to enter the work force.

The 1990 Vocational and Applied Technology Act phrase "shall take into consideration" was subject to different interpretations. Advocates of movement toward a common set of post-program outcome measures interpreted this to mean that a state board was obliged to take the necessary steps to adopt the same measures that were used by their Job Training Partnership Act and Family Support Act counterparts. Those who opposed consolidation interpreted the phrase to mean that a state board was required only to consider a joining of forces, but that it retained full authority to reject such a move.

Regardless of how the specific phrasing was interpreted, there was a clear desire to limit a state's data collection burden, while promoting the collection of data that would support inquiries across program boundaries. In other words, there was increasing interest in monitoring participant flows among different education and employment training programs through time (Stevens 1985, 1991).

The 1990 act, Section 115(b)(2)(a) through (d), required a state's system of core measures of performance to include one or more measures of performance selected from four basic categories of student attainment:

- Competency attainment
- Job or work skill attainment or enhancement, including progress in achieving occupational skills
- Retention in school or completion of secondary school or its equivalent
- Placement into additional training or education, military service, or employment

The 1990 act further required each state board to provide incentives or adjustments that would encourage service to targeted groups or special populations.

The federal mandate to select one or more measures of performance could be satisfied without much regard for the spirit of the 1989 NAVE recommendation:

- Competency attainment could be measured by completion of a vocational or academic course.

- Work skill attainment or enhancement could be documented by completion of one or more vocational courses, short of program completion.

- Retention in school or completion of secondary school or its equivalent could be satisfied by promotion to a higher grade or award of a General Educational Development (GED) certificate.

- Placement into additional training or education, military service, or employment could be recorded by a former student's presence in postsecondary education, military service, or employment, without any other descriptors of the quality of the transition destination from vocational education.

No threat of sanction or use of a federal funds "hammer" emerged from the 1990 act. There was simply a common understanding that the proliferation of federal funding of training programs through departments other than the U.S. Department of Education increasingly loomed as a threat to continued funding of vocational and technical education.

There was general federal and state agreement in the vocational and technical education community that there was some urgency to be able to provide Congress and the public with reliable performance information. However, at a 1991 Design Conference for the National Assessment of Vocational Education, Norton Grubb (1992) warned that—

> The Perkins Act requires state committees of practitioners to adopt performance measures by August 1992. It will therefore be possible to determine what these measures are in late 1992. However, since the Perkins Act requires only that measures be developed (not implemented) and are silent about how such measures are to be used, the real effects of performance measures on data collected, state use of performance measures, and reforms undertaken in response to performance measures will not be clear until later, perhaps 1993 or (realistically) 1994 or 1995. (p. 10)

The new National Assessment of Vocational Education ***Interim Report to Congress*** (U.S. Department of Education 1994) included the following findings about state implementation of the 1990 act's performance accountability requirements:

> In the spring of 1992, most states were still in the process of developing their plans. Many had not yet decided which measures to use, nor had they set standards for performance. (p. 285)
>
> More than two-thirds of secondary and postsecondary state agencies were developing new performance measures, rather than simply adjusting or recycling measures that had already been in use. (pp. 286-287)
>
> With little or no state guidance, most school districts and postsecondary institutions seem to be waiting to see how their state's plan will affect them. (p. 288)
>
> Most states intend to use a far greater number and variety of measures than the minimum required in the Act. (p. 292)
>
> At least one-half of the states will apply their performance-based systems of accountability to all students taking vocational, occupational, or technical courses. (p. 297)
>
> Many of the data that were collected by schools were not reported to states. (p. 300)

It will be important to examine the reliability and validity of new instruments developed specifically for Perkins Act accountability systems. Poor-quality measures could undermine the utility of the whole system. (p. 302)

It will be much more difficult to achieve common measures once state systems are adopted and operational. (p. 302)

The Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1998 (P.L. 105-332)

The 1998 Amendments authorized another National Assessment of Vocational Education. The research team is completing its analysis in anticipation of a mid-2002 report to Congress.

Further Reading from the 1980s and 1990s

The 1982 Job Training Partnership Act and 1990 Perkins Vocational and Applied Technology Education Act focused attention on state performance accountability practices and opportunities. Selected studies are identified here, spanning 12 years between 1987 and 1998, for readers who seek more detailed historical perspective, particularly about the employment indicator.

King, Christopher T., and Pittman, Laura L. ***Performance Standards in Job Training and Job Placement Programs***. Washington, DC: National Association of Counties, 1987, 35 pp. (ERIC Document Reproduction Service No. ED 310 259)

Stern, David. ***Performance-Based Public Policy toward Postsecondary Vocational Education: Some Economic Issues***. Berkeley: National Center for Research in Vocational Education, University of California, 1988, 41 pp. (ERIC Document Reproduction Service No. ED 315 527)

Hoachlander, E. Gareth; Choy, Susan P.; and Brown, Cynthia L. ***Performance-Based Policies Options for Postsecondary Vocational Education: A Feasibility Study***. Washington, DC: National Assessment of Vocational Education, U.S. Department of Education, 1989, 136 pp. (ERIC Document Reproduction Service No. ED 315 535)

Office of Technology Assessment. ***Performance Standards for Secondary School Vocational Education: Background Paper***. Washington, DC: Office of Technology Assessment, U.S. Congress, 1989, 80 pp. (ERIC Document Reproduction Service No. ED 313 591)

Smith, Gregory P. ***A Longitudinal Tracking Study of Short-Term Education and Employment Outcomes of Colorado Community College Graduates***. Denver, CO: Community College and Occupational Education System, 1989.

Florida Education and Training Placement Information Program. ***Annual Report***. Tallahassee: Florida Department of Education, 1990. Figures 1-4, pp. 3-8, document the evolution of the pioneering multiagency state performance accountability program managed by Jay J. Pfeiffer.

Seppanen, Loretta. ***Vocational Outcomes in Washington Community Colleges: Baseline Report***. Olympia: Washington State Board for Community College Education, 1990, 82 pp. (ERIC Document Reproduction Service No. ED 325 185)

Baj, John, and Trott, Charles E. ***A Feasibility Study of the Use of Unemployment Insurance Wage-Record Data as an Evaluation Tool for JTPA***. Washington, DC: National Commission for Employment Policy, 1991, 118 pp. (ERIC Document Reproduction Service No. ED 329 749)

Bross, Nancy. ***Issue Paper: Using Unemployment Insurance Wage Record Data for JTPA Postprogram Performance Standards***. Chapel Hill, NC: Research and Evaluation Associates, Inc., 1991, 21 pp. + appendices.

Harmon, Tim. ***JTPA Performance Standards: Briefing for Illinois State Board of Education Committee of Practitioners***. Springfield, IL: Job Training Programs Division, Department of Commerce and Community Affairs, 1991, 8 pp.

Stevens, David W.; Richmond, Peggy A.; Haenn, Joseph F.; and Michie, Joan S. ***Measuring Employment Outcomes Using Unemployment Insurance Wage Records***. Washington, DC: Office of Policy and Planning, U.S. Department of Education, 1992. (ERIC Document Reproduction Service No. ED 354 345)

Stevens, David W., and Shi, Jinping. ***New Perspectives on Documenting Employment and Earnings Outcomes in Vocational Education***. Berkeley: National Center for Research on Vocational Education, University of California at Berkeley, 1996, 92 pp. (ERIC Document Reproduction Service No. ED 399 398). Updates coverage of this literature through 1995.

Sanchez, Jorge R., and Laanan, Frankie Santos, eds. ***Determining the Economic Benefits of Attending Community College, New Directions for Community Colleges***, no. 104. San Francisco, CA: Jossey-Bass Publishers, Winter 1998. Includes further updating of the postsecondary literature.

Anderberg, Marc, and Pfeiffer, Jay J. ***A Field Guide to Automated Follow-Up: Cost-Effective Collection of Performance Information***. Austin: Texas State Occupational Information Coordinating Committee, 1998, 394 pp.

The Legislative Sequence

Ten vocational education and work force development laws are covered in chapters 2 and 3:

- The Vocational Education Act of 1963 and the 1968 and 1976 Amendments
- The Carl D. Perkins Vocational Education Act of 1984 and the Carl D. Perkins Vocational and Applied Technology Act Amendments of 1990 and 1998
- The Comprehensive Employment and Training Act of 1973 and 1978 Amendments

- The Job Training Partnership Act of 1982
- The Workforce Investment Act of 1998

These laws led to three national studies of vocational education outcomes:

1. The 1981 National Institute of Education final report
2. The 1989 National Assessment of Vocational Education final report
3. The 1994 National Assessment of Vocational Education final report

The core indicator language in Perkins III and in the Workforce Investment Act Title I and Title II is covered in chapter 2. Chapter 3 examines the historical path that led to this common language. Chapter 4 explores what has happened on the federal and state accountability fronts in the 3 years since passage of the 1998 acts.

The Perkins III and WIA Title I and Title II Accountability Processes

Contents of this chapter are as follows:

- The federal-state partnership that is identifying exemplary state performance measurement approaches is described.
- International Organization for Standardization and Baldrige National Quality Program quality management principles are used to identify federal and state opportunities to improve performance through adoption of refined measurement practices.
- Some of the anticipated consequences of federal pursuit of common definitions across Perkins III and WIA Title I and Title II performance measures are explored.

The content here reflects the author's belief that release of core performance indicator data will increase public and media interest in many aspects of career and technical education and work force development system performance. There should be a sense of urgency at the federal, state and local levels to prepare to respond to the anticipated questions.

A decade ago, Judith Gueron, President of the Manpower Demonstration Research Corporation, described performance measurement criteria that are appropriate for the task that lies ahead ("Interview" 1991):

> Much of what evaluators can do to improve the use of their "product" in the policymaking process depends on how credible, clear, and useful evaluation information is. At bottom, we need to have a good product. Then we need to make our conclusions accessible and be able to say what they should (and should not) suggest to policymakers and practitioners....At the early stages, we also need to be thinking about what policymakers and practitioners can use. (p. 76)

Bers and Seybert (1999) identify seven major steps in the reporting process:

1. Determining the clients, purpose, and audiences for the report
2. Determining what data and information are available or must be gathered to satisfy the request
3. Selecting the type of report
4. Choosing the medium in which the report will be released
5. Deciding how to depict data and information. "This decision is influenced not just by the client, purpose, audiences, type and format of the report, but also by the nature of the data and information" (p. 3).

6. Producing the report

7. Disseminating the report

This chapter concentrates on steps 1 and 2 from this list of seven steps for effective reporting. Step 2 should not begin until serious thought has been given to step 1.

Customers and Purposes for Performance Data

Congress is an important client and audience for performance data. The Secretary of Education must submit an annual Perkins III report. The Secretary of Labor is required to submit an annual WIA report. These Secretaries, in turn, look to the Office of Vocational and Adult Education (OVAE) and the Employment and Training Administration (ETA), respectively, to provide the content of these reports. The federal offices are dependent upon states to provide the core indicator data and optional additional performance data needed to satisfy these content requirements through parallel agencies. The state agencies rely upon separate local reporting capacities. These local capacities reflect the ability and willingness of many students, teachers, administrators, and others to provide the necessary information. So, there are six layers of information handling from original data collection to final transmittal of findings to Congress. These are shown in figure 1.

The arrows within each of the six layers of figure 1 indicate expected directions of flow for performance information release. The horizontal arrows represent release of performance information within the unit described and to outside constituents without further handling by others. A vertical arrow pointing up represents a hand-off of performance information to a higher-level authority. The higher-level entity then exercises control over whether, when, and how this performance information will be circulated internally and/or released to the public. A vertical arrow pointing down represents a return of performance information to those who had previously delivered data to the higher-level authority for processing and, perhaps, analysis.

The gap between each pair of layers in figure 1 serves a descriptive purpose. Each gap represents an intermediate data processing step.

- Original collectors of performance information at the base of the pyramid pass the data to a local consolidation agent—a school district, community college central office, or local Workforce Investment Board.

- The local agents, and some private providers of occupational education and work force development training, direct this information through appropriate channels to a state agency—the State Department of Education, Higher Education Coordinating Board, or State Employment Security Agency, in most cases.

- The state agencies combine information from multiple localities for transmittal to the proper federal agency—the Office of Vocational and Adult Education in the U.S. Department of Education and the Employment and Training Administration in the U.S. Department of Labor.

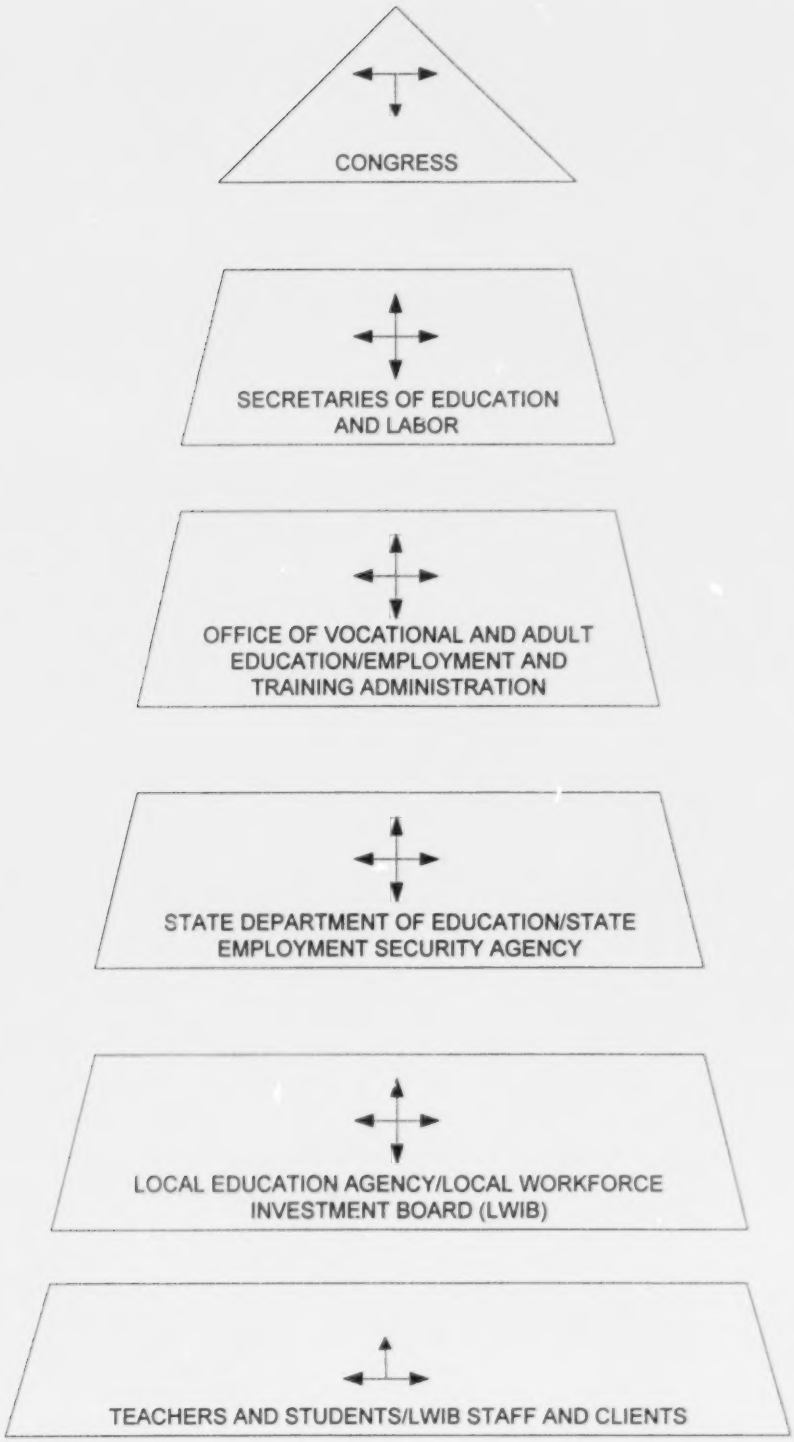
CONGRESS
SECRETARIES OF EDUCATION AND LABOR
OFFICE OF VOCATIONAL AND ADULT EDUCATION/EMPLOYMENT AND TRAINING ADMINISTRATION
STATE DEPARTMENT OF EDUCATION/STATE EMPLOYMENT SECURITY AGENCY
LOCAL EDUCATION AGENCY/LOCAL WORKFORCE INVESTMENT BOARD (LWIB)
TEACHERS AND STUDENTS/LWIB STAFF AND CLIENTS

Figure 1. Layers of performance information handling from collection to transmittal to Congress

- Each of the federal units combines the state data that have been received into a report to their Secretary.

- Each Secretary, in turn, submits the annual report to Congress.

There are other audiences for performance data and other uses of performance information by authorities identified here. These additional customers and uses include—

- The Cabinet members who retain some authority to allocate funds among programs within their domain

- Program executives who manage pools of discretionary and incentive award funds

- Mayors, council members, legislators, and governors who control state and local funds that can be used to motivate continual improvement of performance

- Parents and students who must make future enrollment decisions

- Business executives and human resources personnel seeking guidance about the quality of potential recruits from different schools and providers

- Taxpayers seeking evidence of the return on their investments in career and technical education and work force training

- Media reporters who often serve as a filter between a party that is releasing performance information and the various audiences identified

The flow of performance information from collection to customer is more like a soaking hose, with many points of release, than like a pipeline with just one release of information to Congress. This difference is important.

The content, timing, and format of release sought by customers are usually unique to each user's intended purpose. Every step from basic data element definition through collection method(s) and quality control monitoring to processing specifications and presentation style should begin with explicit consideration of each customer's requirements or preferences.

Eleven types of performance indicator customer are identified here—Congress, Cabinet members, program executives, board members, school leaders, teachers, elected officials, parents and students, business executives and human resources professionals, taxpayers, and media people. Four core indicators of performance (Perkins III), 17 indicators (WIA Title I), or 3 indicators (WIA Title II) cannot be expected to satisfy the needs of these diverse constituencies.

One core indicator, "transition to further education or employment," illustrates how different the needs of each type of customer might be. The illustration begins with a reexamination of the accountability language in Perkins III and WIA Title I and Title II. This is followed by an

exploration of what this means for preferred data element definitions and collection methods, and recommended quality control procedures.

Transition to Further Education and/or Employment

Perkins III, Section 113(b)(2)(A), defines *Core Indicator Three* as "placement in, retention in, and completion of, postsecondary education or advanced training, placement in military service, or placement or retention in employment."

WIA Title I, Section 136(b)(2)(A), defines *Core Indicator Nine* as "older youth (eligible youth aged 19-21 at registration) entered employment rate."

WIA Title II, Section 212(b)(2)(A), defines *Core Indicator Two* as "placement in, retention in, or completion of, postsecondary education, training, unsubsidized employment, or career advancement."

Review these three core indicator definitions. Decide how many possible transition events appear in the three definitions. A "transition event" is a change from one status to another, such as moving from school to work or from high school to a community college. What number of transition events did you choose? I selected the number 9, with an asterisk.

The Perkins III *Core Indicator Three* definition appears to include four clear transition event possibilities, which are not mutually exclusive:

1. Placement in postsecondary education
2. Placement in advanced training
3. Placement in the military
4. Placement in employment

The WIA Title I *Core Indicator Nine* definition includes one transition possibility: entered employment.

The WIA Title II *Core Indicator Two* definition appears to include four transition event possibilities:

1. Placement in postsecondary education
2. Placement in training
3. Placement in unsubsidized employment
4. Career advancement

Completion

The asterisk was added to indicate uncertainty about whether "completion" should be treated as a transition event. "Completion" of a career and technical education program is assumed to increase a student's value in the world of work. But the realization of this value requires another step, actual transition to employment.

Debate continues about whether educational accountability should properly end with evidence of skill development, without consideration of the later use of these skills. Skill use is contingent upon factors over which educators exercise little influence.

"Completion" *per se* is a solid core indicator of performance for some customers of an accountability system, such as Congress, the Office of Vocational and Adult Education, a state department of education, a principal, or a teacher. But legislators, parents and students, business human resource professionals, school board members, and journalists are expected to look beyond this intermediate stage of achievement. These customers are likely to focus on the transition to work or further education of "completers."

The word "completion" in Perkins III *Core Indictor Three* led to immediate confusion for postsecondary performance measurement. There is apparent overlap with *Core Indicator Two*. The definition of *Core Indicator Two* is—

> student attainment of a secondary school diploma or its recognized equivalent, a proficiency credential in conjunction with a secondary school diploma, or a postsecondary school degree or credential.

The Office of Vocational and Adult Education resolved this problem by not including completion as a subindicator under *Core Indicator Three* in the ***Core Indicator Framework*** document (U.S. Department of Education 2000). "Postsecondary degree or credential" remains a subindicator under *Core Indicator Two*.

Retention

The word "retention" appears in each of the three core indicators defined here—Perkins III *Core Indicator Three*, WIA Title I *Core Indicator Nine*, and WIA Title II *Core Indicator Two*. Retention is not a transition event. There has been no movement from a beginning status to a new destination status.

Retention can be an important indirect indicator of progress toward a goal. For example, the Perkins III *Core Indicator Three* phrasing is "placement in, retention in, and completion of, postsecondary education or advanced training." Retention is a necessary intermediate step between placement and completion.

Does the distinction between continuity in a job held before and after completion of a career and technical education program, versus documented entry into a new job after completion, matter? It is important to know the intended use of the performance information before answering this question.

Congress may not care about the distinction. The stated purpose of Perkins III, in Section 2 of the act, is—

> to develop more fully the academic, vocational, and technical skills of secondary and postsecondary students who elect to enroll in vocational and technical education programs.

There is no explicit reference to an expected employment outcome, but it is reasonable to assume that development of academic, vocational, and technical skills is an intermediate step toward use of these skills in employment.

The stated goal for state performance accountability in Section 113(a) of the act is—

> to assess the effectiveness of the State in achieving statewide progress in vocational and technical education, and to optimize the return of investment of Federal funds in vocational and technical education activities.

Again, this language can be interpreted to mean that educational accountability should be limited to indicators of a state's progress in developing academic, vocational, and technical skills of only those students who elect to enroll in vocational and technical education programs. Consistent with this interpretation, optimization of federal funds allocations would be limited to indicators of relative progress among the states in developing these skills for the designated students.

The phrase "placement ***or*** retention in employment" (emphasis added), as a core indicator component in Section 113(b)(2)(A) of the act, reinforces a conclusion that Congress was not interested in the distinction in October 1998, when Perkins III became law.

Commas and the Words "And" and "Or"

A difference of phrasing appears in the Perkins III and WIA Title II core indicators. The Perkins III *Core Indicator Three* definition is "placement in, retention in, ***and*** completion of, postsecondary education or advanced training" (emphasis added).

The WIA Title II *Core Indicator Two* definition is "placement in, retention in, ***or*** completion of, postsecondary education, training" (emphasis added).

The difference in phrasing can be interpreted as a signal of the intent of the Committee staff members who crafted the final wording of Perkins III and WIA Title II.

- Vocational and technical education students are expected to progress from placement, through retention, to completion of postsecondary education or advanced training.
- Adult education and literacy program enrollees are expected to advance only one step, depending on their previous postsecondary status.

"Placement" versus "Entered Employment"

The words "placement," "retention," and "completion" appear in Perkins III *Core Indicator Three* and in WIA Title II *Core Indicator Two*, but not in WIA Title I *Core Indicator Nine*, where the term "entered employment" appears instead. Do "placement" and "entered employment" mean the same thing? We know that today the answer is "no"; these are not synonyms in practice.

The Perkins III *Core Indicator Three* does not require a student to make the transition into employment after completion of a secondary or postsecondary career and technical education program to satisfy the "placement or retention in employment" criterion. Reporting evidence that a former student is employed within an agreed-upon time interval after program completion satisfies the core indicator requirement for federal Perkins III accountability.

After leaving high school, a former student can be found in the same part-time job s/he has held continuously since entering a career and technical education program, or before, and be counted as a "placement or retention in employment" success. In fact, a former high school career and technical education program completer who enrolls part time in a local community college and works part time might be counted as a "placement or retention in employment" and as a "placement in postsecondary education," if quality control steps to avoid this are not taken. One goal of the OVAE Data Quality Initiative, which is described in more detail later in this chapter, is to encourage states to recognize the importance of nonduplication of this kind for federal reporting purposes.

Concurrent Employment and Postsecondary Enrollment

An annual cycle of postsecondary education data collection is common. Assume that a completer of a high school career and technical education program graduates at the typical time of year. S/he then enrolls at a local community college in the Fall, continues in the Winter/Spring term, and works part time throughout the year. S/he would be expected to appear in records that are often used to document these three subindicator measures for *Core Indicator Three* calculations.

The feasibility of identifying and eliminating duplication depends upon the methods and timing of data collection that are used and adoption of quality control steps to eliminate the possibility of counting a former career and technical education student in more than one performance indicator. A basic requirement is that each source of performance information must use a common identifier, so the sources can be linked to detect multiple appearances.

Choosing among Transition Destinations

No rule has been established by OVAE to advise states how to proceed when multiple appearances occur in performance data files. There has been no formal expression of a federal preference among transition possibilities.

Some states have defined a high school graduate's enrollment in postsecondary education as preferred over immediate transition to employment. In such performance accountability situations, the large subpopulation of former high school vocational and technical education completers found in both postsecondary education and employment would be assigned to postsecondary education only. The documented employment status would be ignored for this performance accountability use of the data.

A public ranking of preferred student transitions offers users of performance information a clear understanding of the short-term goals set for former career and technical education stu-

dents. The Perkins III *Core Indicator Three* composite does not convey this important information about educational policy objectives. Again, the definition of *Core Indicator Three* is—

> placement in, retention in, and completion of, postsecondary education or advanced training, placement in military service, or placement or retention in employment.

Literal versus Expedient Interpretations of the Accountability Language

Linguistic care is not always exercised at the time of final crafting of forward-looking performance accountability language. Members of pertinent committees, and staff members responsible for the negotiation of phrasing, understandably concentrate on funds allocation and student eligibility criteria at this occasionally frantic point in negotiation of compromise language.

Members of Congress have no obligation to limit questions during reauthorization hearings to the indicators that were placed in an act some time in the past. Symmetry is not required between forward-looking goal statements and backward-looking questions about performance in the pursuit of these goals.

Return to the six layers of performance information handling in figure 1 (p. 25) and to the 10 bullets listing types of performance information customer that follow figure 1. Is a "placement or retention in employment" indicator expected to satisfy any of these customers, including members of Congress? My answer is yes and no. Yes, it satisfies a minimum core indicator requirement. But, no, this is not expected to satisfy anyone's curiosity about the postcompletion employment of former students in career and technical education programs.

The Importance of "Comparison" Requirements

One word captures the essence of why confidence is expressed here about the inadequacy of *Core Indicator Three*. The word is "comparisons." Perkins III, Section 113(c)(3), states that the Secretary of Education—

> (A) shall make the information contained in [State annual] reports available to the general public; (B) shall disseminate State-by-State comparisons of the information; and (C) shall provide the appropriate committees of Congress with copies of such reports.

This sharing of performance information is expected to have at least three important effects on state performance accountability systems:

1. States have an incentive to include only core indicator information in the required annual report to the U.S. Department of Education. This limits each state's exposure to possibly unfavorable comparisons with the unknown performance of other states.

2. States may also have an incentive to include optional additional indicators of performance. However, if discretionary indicators are included in a state's approved plan, measures of

performance using these indicators must be included in the state's annual performance report to the U.S. Department of Education.

States are most likely to accept this offer if favorable performance is expected. But each state has better information about its own expected performance than how other states will perform. States that are satisfied enough with their performance to voluntarily place the evidence of this performance in national public circulation are more likely than less-confident states to include optional indicators of performance in their plan and subsequent annual performance reports.

Definitions of optional indicators are not included in the act, because Section 113(b)(3)(A)(i) is designed to encourage state creativity in the selection of a broad portfolio of performance indicators. Each state retains exclusive control over the choice of additional indicators and the definition of each of these, subject to OVAE acceptance in negotiations.

3. States that have chosen not to provide performance information beyond the minimum required core indicators will be asked about this cautious decision. Less-forthcoming states will be told about the more expansive portfolios of performance indicators submitted by some other states.

Who might ask these questions? Anyone who becomes aware of uneven availability of performance information among the states, including Congressional committee staffs, the General Accounting Office, state legislators, and particularly media representatives who seek access to more and better information.

What can be done to prepare for the questions that will be asked? The remainder of this chapter concentrates on answering this question.

The OVAE Data Quality Initiative

The Program Reform Branch in the Office of Vocational and Adult Education (OVAE) of the U.S. Department of Education knew that some states had begun to cooperate in voluntary movement toward a common alignment of basic performance indicator definitions and practices long before final passage of the 1998 Perkins III Amendments. Soon after the amendments were signed into law in October 1998, OVAE began a formal Data Quality Initiative.

The first step in the Data Quality Initiative was to separate the 4 core indicators of performance into 14 subindicators. This was done by OVAE staff in consultation with the states and other interest groups. The 14 subindicators are as follows:

Core Indicator 1: Skill Proficiency Attainment

1.S1 Secondary academic attainment
1.S2 Secondary vocational and technical skill attainment
1.P1 Postsecondary academic attainment
1.P2 Postsecondary vocational and technical skill attainment

Core Indicator 2: Credential Attainment

2.S1 Secondary completion
2.S2 Secondary proficiency credential with secondary diploma
2.P1 Postsecondary degree or credential

Core Indicator 3: Placement and Retention

3.S1 Secondary placement
3.P1 Postsecondary placement
3.P2 Postsecondary retention

Core Indicator 4: Participation in and Completion of Nontraditional Programs

4.S1 Participation in secondary nontraditional programs
4.S2 Completion of secondary nontraditional programs
4.P1 Participation in postsecondary nontraditional programs
4.P2 Completion of postsecondary nontraditional programs

The Interdependence of Management Information System Components

The first sentence of chapter 1 of this volume refers to a "new generation of the performance accountability partnership among the states, the U.S. Department of Education and the U.S. Department of Labor." The list of 14 subindicators just presented highlights the importance of another new generation accountability partnership—between secondary and postsecondary management information system personnel in each state. The success of the OVAE Data Quality Initiative will depend, in many ways, upon the ability of these and other data management systems to talk to each other.

Figure 1 uses a single data flow pyramid composed of six layers of data transfer between collection and reporting to Congress. Separate data flows pertaining to vocational and technical education and employment training are represented in this single pyramid. Now, with the introduction of the 14 subindicators of vocational and technical education performance, it helps to think of many pyramids of data collection and transfer prior to arrival in the hands of a customer.

At a minimum, there are public secondary, public postsecondary, and work force development data collection, processing, and release pyramids (alternatively referred to as "silos" to capture their free-standing independent nature). There are multiple hidden passageways of data collection and internal transfer within each of these data flow systems.

Data collection under the Elementary and Secondary Education Act will be revised when the *No Child Left Behind Act of 2001* emerges from conference, is passed and signed into law. The *Improving America's Schools Act of 1994* and the *Individuals with Disabilities Education Act of 1997* amendments had already provided a context of management information system change before

passage of the Perkins III Amendments in 1998 (Goertz, Duffy, and Le Floch 2001). The *Student Right to Know and Campus Security Act of 1991* requires institutions eligible for Title IV federal financial aid to release graduation rates of their first-time, full-time students. The *National Education Statistics Act of 1994* requires the National Center for Education Statistics (NCES) of the U.S. Department of Education to "collect, analyze, and disseminate statistics and other information related to education."

The reporting requirements that flow from each of the acts mentioned, and others, can be thought of as modules of a larger information management strategy. These modules are often independent, allowing change without affecting other modules. At the same time, particular components have not necessarily been designed to permit routine linkage with other modules.

The OVAE Pilot Test of Statewide Performance Indicator Reporting Capacities

Eight states (Florida, Illinois, Indiana, Missouri, New Jersey, Ohio, Texas, and Virginia) volunteered to test their capacity to report statewide performance for secondary academic attainment, vocational and technical skill attainment, award of a secondary diploma, and placement in postsecondary education, military service, or employment.

The pilot phase goals were to—

- Identify states' capacities to provide data for each of the core indicators of performance
- Determine differences in state definitions of threshold levels and performance measures
- Evaluate the sensitivity of performance results with respect to states' reporting approaches

Secondary Pilot Phase Findings and Remaining Issues

In the *Secondary Pilot Project on Accountability*, Vickie Schray (1999) includes the following findings:

> There are significant differences in state definitions of threshold levels—concentrators—as well as state definitions of completers. There is a need to further clarify state definitions for more accurate and reliable state comparisons. (p. 3)

> The most significant differences between states are in their use of concentrators or completers in their denominators for the skill attainment and completion measures. These differences may have significant effects on state performance differences. (p. 3)

Schray identified major remaining issues:

- Improving clarity and consistency in state definitions—to identify common definitions where possible and better understand and document state differences when reporting performance data.

- Defining the denominator in performance measures—to reach greater consensus in defining the student populations to be included in the denominators of the core measures. Concentrators or completers for academic attainment? All completers or only completers who graduate for placement?

- Reporting state differences and improvements in state data quality—especially in areas that affect state performance comparisons (e.g., skill attainment, placement) within and between measurement approaches.

Postsecondary Pilot Phase Findings and Remaining Issues

In *Postsecondary Pilot Project on Accountability*, Schray (2000) includes the following findings:

> There are significant differences in state definitions of threshold levels—vocational concentrators/program enrollees. (p. 2)
>
> These differences have significant effects on the percentage of vocational participants who are reported as vocational concentrators/program enrollees. (p. 2)
>
> The most significant differences in state definitions are—
>
> > "Entry vs. Exit Cohort"—States may define the cohort based on when they enrolled in a program and set a time to degree time period (e.g., 5 years) for reporting completion rates of that entry cohort [or] States may define an exit cohort based on when students stopped participating in a program. (p. 2)
> >
> > "First-time, Full-time"—States may include all program enrollees, only full-time enrollees, or only first-time, full-time enrollees. (p. 3)
> >
> > "Enrollment Definition"—States may vary in how they define program enrollees (i.e., vocational concentrators). States may require student intent to complete a program and may require a minimum number of credits earned ranging from one course to three-fourths the credits needed to complete a program. (p. 3)
> >
> > "Tracking Time Period"—States may vary in the time period they allow students to complete a program before they are counted as a noncompleter. (p. 3)

Schray identified major remaining issues:

- Improving clarity and consistency in state definitions
- Measuring program completion
- Measuring placement
- Reporting state differences and improvements in data quality

Steps Taken after the Pilot Phase Findings Were Known

The results of the pilot test of state performance reporting capacities influenced the content of the OVAE ***Core Indicator Framework***, which was released in January 2000. The intended uses of the framework were clearly stated in the introductory paragraphs of the paper:

> OVAE will use this framework to provide clear guidance and technical assistance to states. The framework will also be the basis for performance reporting required by Perkins III....OVAE views the development of this core indicator framework as the first step in working with states, the Department of Labor, and stakeholder organizations to develop a larger performance accountability framework. This larger framework will address the remaining performance accountability system issues including setting and adjusting performance levels, continuous improvement, and incentive grants and sanctions. (U.S. Department of Education 2000, p. 1)

A series of technical assistance workshops for the Perkins III state performance accountability teams, convened by OVAE, followed the release of the ***Core Indicator Framework***. A Web-based Peer Collaborative Network was established by OVAE as a basic activity of the Data Quality Initiative. This continues to offer rapid-response answers to questions posed by state performance accountability team members, including counsel from state peers as well as federal overseers of the Perkins III performance accountability process. A train-the-trainer technical assistance workshop for the state performance accountability teams was sponsored by OVAE in late August 2001. This broadened and deepened the pool of federal and state accountability expertise. The flow of learning is both to and from the states in these workshops.

The OVAE Data Quality Initiative has not occurred in isolation. One reason is that the *Government Performance Results Act of 1993* (GPRA) required all federal agencies to establish performance accountability systems. Each agency is expected to report on a regular basis to Congress on progress achieved in pursuing performance goals that have been set. The Baldrige National Quality Program and International Organization for Standardization principles have been adopted by many agencies in responding to the GPRA requirements.

This broad context for federal program performance review is reflected in the next two sections. The first section covers highlights from a recent General Accounting Office (GAO) report to Congress on Department of Labor GPRA accomplishments. The second section contains some basic principles of outcome-based performance measurement that were prepared by an outside contractor for the Department of Health and Human Services. These presentations are intended to establish a solid foundation for application of the Baldrige and ISO management quality principles.

Selected GAO Findings from a Review of DOL Performance

The GAO report to Congress (2001), titled *DEPARTMENT OF LABOR: Status of Achieving Key Outcomes and Addressing Major Management Challenges*, describes how the assessment was conducted:

> As agreed, using the selected key outcomes for Labor as a framework, we (1) assessed the progress Labor has made in achieving these outcomes and the strategies the agency has in place to achieve them; and (2) compared Labor's fiscal year 2000 performance report and fiscal year 2002 performance plan with the agency's prior year performance report and plan for these outcomes. (p. 3)

With respect to the planned outcome "job training participants get and keep jobs," the GAO concluded that—

> Labor reported making progress in achieving this outcome, with performance meeting most of the goals. However, assessing progress for some goals has been complicated by the transition from one employment and training program to another and by the lag in available performance data. (p. 4)

Another of the four key outcomes selected by GAO for review is "individuals successfully transition from welfare dependency to self-sufficiency." GAO's assessment of Labor's performance is instructive here, because it addresses quality criteria in the chosen performance indicator definition and a quality criterion for the measurement process itself.

> Labor improved the goal from last year's report by incorporating a measure for job retention and one for increased earnings. The strategies identified to achieve the goal appear to be clear and reasonable and incorporate program evaluation....Labor improved its fiscal year 2000 performance report from its fiscal year 1999 report by providing more complete information on the quality and credibility of performance data....Labor used a new assessment category—"substantially achieved"—when at least 80% or more of the goal was attained....The use of this category may give an impression of successful performance across all goals or on a specific goal when actual performance might be as much as 20 percent below the target....Labor's fiscal year 2002 plan improved its discussion of its efforts to verify and validate performance data as compared with the fiscal year 2001 plan. However, it still lacks sufficient information on how it will address certain data limitations, such as timeliness and coverage limitations. (p. 5)

The "retention" and "earnings gain" subindicators of performance described in the previous paragraph are relevant to the "transition from welfare to self-sufficiency goal." Self-sufficiency is a more rigorous target than employment.

Close attention should be given to these GAO conclusions about the quality of Department of Labor performance measurement. The same issues are expected to appear in reviews of other federal programs.

The Department of Health and Human Services (DHHS) sought the assistance of an outside contractor to outline basic principles of outcome-based performance. ***Alternative Outcome Measures: TANF Block Grant***, Chapter 2: Principles of Outcome-Based Performance Measurement (U.S. Department of Health and Human Services 2000) can be found at http://www.aspe.hhs.gov/hsp/alt-outcomes00/Ch2.htm. The contractor's findings are briefly presented next.

Principles of Outcome-based Performance Measurement

An outcome-based performance measurement system consists of four basic components: goals, measures, standards, and consequences.

A Goal Statement

A clear goal statement is required at the outset, so there can be a common understanding of the outcome that is sought. Without consensus about a goal, it is impossible to define measures of performance that can be used to gauge progress toward the goal. The criterion of common understanding does not require universal buy-in, only that there is a common understanding of the goal.

Validity and Reliability of Measurement

A good indicator of performance should have two basic attributes:

1. **Validity**—general agreement that the indicator is, in fact, an acceptable measure of performance with respect to a previously stated goal

2. **Reliability**—consensus that the chosen indicator offers an accurate measurement of performance, such that repeated use of the indicator under identical conditions would produce the same result, and that adoption of the measure under different circumstances will produce an accurate and valid measurement of performance

Validity and reliability are separate criteria in judging the appropriateness of a particular performance indicator. For example, there could be a consensus that Unemployment Insurance Wage Records offer an accurate measurement of placement in employment (a reliability criterion), while at the same time there could be persistent disagreement about this being an acceptable measure of performance for an act with a stated purpose "to develop more fully the academic, vocational, and technical skills of secondary students and postsecondary students who elect to enroll in vocational and technical education programs" (a validity criterion). In fact, a consensus has not emerged about the reliability of Unemployment Insurance Wage Records for this performance measurement purpose. Some people accept "placement in employment" as a valid indicator, but question the reliability of this particular way of measuring performance on this subindicator. Others are more comfortable with the reliability of this administrative data source than with employment as a valid measure of vocational and technical education performance.

These disagreements will surface in upcoming reauthorization negotiations. This is one reason why close attention has been urged by the OVAE staff and other federal and state partners in accountability reporting to the validity and reliability principles of performance measurement quality.

Standards, or Levels, of Performance Targeting

The "standards" or "levels" component of an outcome-based performance measurement system should contain only valid and reliable indicators. These can then be used to define interim target values to gauge progress toward a previously stated goal.

Adjusted Performance Targets

The adoption of measurement standards, or levels, to reflect differences in conditions that are agreed to have an impact on performance, increases the difficulty of "standards" or "levels" specification. Adjustments are needed for equity in performance measurement but there is little agreement about what the adjustment factors should be and how they should be measured.

The simplicity of core indicators that are intended for release to the public is compromised by the introduction of adjustments. This is a serious issue for those who define the measures, those who carry out this mandate, and those who use the resulting performance information. At what cost has simplicity been achieved? Who are the winners and losers from too little recognition of adjustments of performance targets? Partial answers are given to these questions later in this chapter and in the concluding chapter.

The Consequences of Measured Performance

Neglect of the consequences component of an outcome-based performance measurement system is a direct route to peril. Those who have invested in consensus building about a goal, specification of valid and reliable measures of progress toward this goal, and negotiation of interim target levels of these measures, should expect different consequences to follow success or failure in reaching or exceeding this target level during a reporting cycle.

If a major element in the payoff on the investment made in performance measurement quality is not consequences, then the outcome-based performance measurement system is severed from subsequent policy and management decisions. Why invest in quality of performance measurement if performance itself does not matter?

A Process Criterion for Performance Measurement Quality

The DHHS contractor identified a different kind of performance measurement quality criterion:

> Engaging a broad range of stakeholders in structured discussions about all of these elements [goals, measures, standards and consequences] can be the basis for building performance partnerships in designing and implementing a performance measurement process. Even if one is not trying to achieve consensus, this wider audience provides a better perspective on what is possible in the real world (e.g., what is operationally feasible, what are possible unintended consequences, etc.) and may facilitate future data collection efforts. (U.S. Department of Health and Human Services 2000, p. 1)

The contractor drew relevant lessons from the research conducted for DHHS:

> By necessity, performance measurement systems are limited to those elements for which data can be collected inexpensively, routinely, and in a timely fashion. (p. 4)
>
> Outcome-based performance measurement can still be a useful tool to monitor program operations and promote improvements, as long as stakeholders at all levels of operations agree that there is a clear logical system connecting the activities of program operators to the outcomes that are measured. (p. 4)
>
> The chosen measures must not give programs incentives to achieve high levels on performance measures through the use of strategies that subvert their fundamental intent. (p. 4)
>
> Because it is impossible to fully account and adjust for all the variations in circumstances among states, no performance measurement system can be perfectly fair. It is important to develop mechanisms which recognize that states are facing different economic and demographic environments. (p. 4)
>
> It is extremely difficult to determine an appropriate standard without baseline data on past performance. When data for a specific measure have never been collected or analyzed before, neither state nor federal policymakers are likely to know what would be a reasonable level of performance. (p. 5)
>
> An additional factor must be considered when a new performance measurement system is adopted....When data for a new measure are first collected, in many cases, states will have little ability to predict their performance in advance—either because the program is new and there is no past performance, or because the data collection requirement is new and there are no baseline data. This uncertainty about performance levels appears to have very different consequences depending on whether a bonus or penalty is involved. In the context of penalties, performance uncertainty appears to lead to highly risk-averse behavior....In the context of bonuses, uncertainty appears to lead to a wait-and-see attitude....One possible means of mitigating the negative consequences of this asymmetry would be to implement a new measurement system in phases, beginning first with bonuses for high performers and adding penalties only after several years of experience with the measures, when more information would be available to use in setting standards. (p. 8)

The performance measurement lessons highlighted here are expressed in the DHHS contractor's words to emphasize a point. The Perkins III performance accountability process undertaken by OVAE through the Data Quality Initiative has followed basic "good practice" principles of system design that apply far beyond vocational and technical education activities.

Applying Quality Management Principles to the OVAE Data Quality Initiative

The Baldrige *Education Criteria for Performance Excellence* (U.S. Department of Commerce 2001) and International Organization for Standardization (ISO) Principles for quality management assessment exhibit substantial overlap, as would be expected. No attempt is made here to apply these criteria and principles sequentially.

The Baldrige criterion "information and analysis" and the ISO principle "a factual approach to decision making" both focus on data accuracy, accessibility, and proper use. The ISO principle adds "taking action based on factual analysis, balanced with experience and intuition," whereas the Baldrige criterion adds "evidence of their use and effectiveness in daily operations" and "steps taken to keep the performance measurement system current with service needs and directions."

Data Accuracy, Accessibility, and Use

Perkins III, Section 3, Definitions, does not include a definition of "vocational and technical education students," even though this term appears in the Section 2 statement of the act's purpose. A goal cannot be translated into an action plan without a clear understanding of the target population for such actions.

Section 3(29) does define "vocational and technical education" as—

> organized educational activities that (A) offer a sequence of courses that provides individuals with the academic and technical knowledge and skills the individuals need to prepare for further education and for careers (other than careers requiring a baccalaureate, master's, or doctoral degree) in current or emerging employment sectors; and (B) include competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, of an individual.

Early in the development of the *Core Indicator Framework*, OVAE defined four sequentially more demanding stages of secondary vocational and technical education attainment:

1. **Participant**—a student who enrolls in at least one vocational and technical education course

2. **Concentrator**—a "participant" who reaches a state-defined threshold of vocational and technical education courses

3. **Completer**—a concentrator who acquires a state-defined portfolio of academic and technical knowledge, skills, and proficiencies

4. **Graduate**—a completer who also receives a high school diploma or its state-recognized equivalent

Each of these definitions determines which subpopulations of students, or former students, are to be included in the denominator of each of the secondary subindicators of performance found in the *Core Indicator Framework*.

The Definition and Measurement of "Concentrator"

State information systems define vocational and technical education programs. The new term "concentrator" did not always align with existing state information systems. The new term often fell between state-defined courses and clusters of courses called programs, and was therefore not defined for management reporting purposes.

The performance accountability goal is clear—winnow the population of all vocational and technical education participants to remove the casual isolated course-taker from the pool of those who are making a serious attempt to acquire technical knowledge and skills needed for further education and employment success.

From the perspective of the Secretary of Education, Congress, and the public, it is important for OVAE to ensure that each state defines concentrator to include all students who satisfy the criterion "making a serious attempt." This definition is the practical starting point for Perkins III performance accountability.

The Definition and Measurement of "Completer"

Notice an important difference in the OVAE criteria that define "concentrator" and "completer." The concentrator definition is based on a student's reaching a course-taking plateau. The completer definition is based on attainment of a state-defined portfolio of academic and technical knowledge, skills and proficiencies.

One of the difficult challenges for OVAE in its encouragement of state convergence toward common definitions of the core indicators is that most state accountability systems today define both concentrator and completer based on attainment of specified vocational and technical education course completion points. But the availability of a reliable data link between a state-defined course completion point and student attainment of academic and technical knowledge, skills, and proficiencies differs among the states. This unevenness is a key target of the OVAE Data Quality Initiative.

The Office of Technology Assessment's (1994) ***Testing and Assessment in Vocational Education*** is an excellent source for a pre-Perkins III treatment of this issue. The National Skill Standards Board website (www.nssb.org) is a good source for up-to-date coverage of progress that has been made in defining common national standards for some industries and occupations.

The Definition and Measurement of "Equivalent of a High School Diploma"

A common, and contentious, issue with regard to the definition of secondary graduation is the definition of a "state-recognized equivalent" of high school graduation. Some states treat satisfactory performance on the Tests of General Educational Development (GED Tests) as the equivalent of a high school diploma. The GED Tests, developed by the American Council on Education, measure attainment in writing skills, social studies, science, interpretation of literature and the arts, and mathematics. The specification of scoring criteria to be awarded a passing score overall is left to each state.

Those who pass the GED tests in some states are awarded a regular high school diploma. So, a state's performance information system may not distinguish between those who passed the GED tests and those who completed all regular, or routine, high school graduation requirements.

Does such a definition of "graduate" satisfy the validity and reliability criteria defined earlier for a "good" performance indicator? The GED tests route to high school graduation may be growing in importance. Until a recent cooling of economic performance in many local economies across the United States, anecdotal evidence had surfaced in "hot" local labor market situations that some high-achieving students were learning marketable skills, then dropping out of school to accept an attractive job offer, and later passing the GED tests to satisfy a postsecondary enrollment requirement. This phenomenon appears as leakage from the data collection and transfer pipeline through which traditional progress from concentrator status to completer, and then on to graduate, is documented.

Only former vocational and technical education concentrators can complete. So, if only completers are counted in the denominator of a placement rate indicator, premature placement prior to completion does not appear in a traditional vocational and technical education management information system.

Up to this point, only student subpopulation definitions that surfaced during the OVAE pilot test of Perkins III secondary core indicators have been discussed—vocational and technical education concentrators, completers, and graduates. These are the sequentially more demanding student attainment criteria that define the denominator building blocks for calculating Perkins III secondary subindicator values.

Having covered the "who" of Perkins III accountability, attention turns now to the "what." The limited information sought from states during the OVAE pilot phase included secondary academic and vocational-technical skill attainment, secondary credential attainment, and placement.

The Definition and Measurement of "Secondary Academic Skill Attainment"

The explicit performance measurement goal is to document student mastery of academic knowledge. Two state-level decisions are involved:

1. Define the concentrator subpopulation that will be used in reporting secondary academic skill attainment.

2. Define the challenging state academic standard that determines which concentrators counted in the denominator are included in the numerator as having met this standard.

The practical objective in each annual cycle of subindicator reporting is to calculate a percentage figure. What percent of the reference subpopulation of "concentrators" met an interim plateau of academic knowledge?

The goal defined in the 1998 amendments is a level of knowledge attainment. This differs from the performance goal sought under the 1990 act, which focused on performance *gain*.

One perspective on the timing of academic knowledge mastery, as a Perkins III core subindicator, is that this should be measured before a student enrolls in intermediate and upper-level vocational and technical education courses. This point of view holds that a threshold level of academic attainment is a necessary prerequisite to success in vocational and technical skill attainment.

A different point of view holds that academic knowledge attainment should be measured coincident with or after a student's exit from vocational and technical education studies. Student attainment of academic and vocational-technical skills is seen as the result of a single integrated process that cannot be separated into before and after components. The relevance of particular course prerequisites is not denied, but attention is directed toward a student's attainment at the time they would be expected to transition.

The cumulative effect of measurement challenges, including the ones that have been introduced here, might seem to threaten the integrity of the federal-state performance indicator partnership. State accountability systems measure academic attainment in different ways. State information systems undergo frequent modifications on different time schedules in response to mounting pressure to compare and contrast student achievement levels. Anticipated passage of the *No Child Left Behind Act of 2001* will increase the frequency of information system modification.

The Definition and Measurement of "Secondary Vocational and Technical Skill Attainment"

The goal is to document student mastery of vocational and technical skills. OVAE has defined this to mean "knowledge and skills that meet State-established and industry-validated standards."

A frequent state response to the OVAE definition is that current state definitions of completer and graduate satisfy this performance indicator requirement—students who complete, and particularly those who complete and graduate, have *ipso facto* met state-established standards. However, these standards vary from state to state. Furthermore, no consensus has been reached about a practical definition of "industry-validated standards."

The National Skill Standards movement seeks to achieve a high level of state and local convergence in the routine recognition and use of common industry-validated skill standards. The National Skill Standards Board website (www.nssb.org) provides many examples of successful negotiation of such standards.

Those who resist prodding to adopt standards of this type often hold that skill standards should be time and location sensitive. These stakeholders want local economic conditions and employer personnel practices factored into skill standards decisions.

The controversy over industry-validated skill standards recalls the contentious issue of performance indicator adjustment that was covered earlier. Pervasive recognition of local differences in labor market conditions and business personnel practices is inconsistent with adoption of just a few core indicators of performance. This is another example of what is given up when ease of reporting is given a higher priority than possible validity and reliability criteria applied to what is reported.

Requirement of a level of skill standard achievement that is not in sync with state economic realities can precipitate unintended consequences of the performance measurement process. Some students might be denied admission who otherwise would have benefited from enrollment in a vocational and technical education curriculum. Some students might struggle to achieve national standards given current school investment decisions. Uncertainty about how these students will be treated in the calculation of subindicator performance levels can result in steps to discourage enrollment of these students.

Some states will be exposed to public expressions of concern following the release of state comparisons of core indicator definitions and values, if the media report on these comparisons. This will add momentum to "natural" convergence forces associated with work force mobility. The more the public knows about the performance measurement approaches of other states, the more vocal some state and local advocacy groups are expected to become in pressing for performance measurement refinements at home.

The Definition and Measurement of "Secondary Credential Attainment"

Another subindicator goal is that vocational and technical education completers receive a high school diploma or its state-recognized equivalent. A related subindicator goal is that these students also receive a proficiency credential that provides a more detailed record of their academic and vocational-technical skill achievements.

Measurement issues associated with credential documentation have been covered in previous subsections. These are not repeated here. Suffice it to say that states differ in the sophistication of their credential recognition and documentation systems. The OVAE Peer Collaborative Network, which is designed to foster more frequent communication of state innovations in performance measurement, will broaden and deepen awareness of these differences. Whether and how states respond to this heightened awareness remains to be seen.

The Definition and Measurement of "Secondary Placement"

Core Indicator Three is intended to gauge a state's progress in achieving high school student transitions to postsecondary education or advanced training, employment, or military service. A long list of performance measurement challenges emerged from this goal statement during the OVAE pilot test of state performance reporting capacity.

- The concept of "successful transition" must be translated into practical data element definition and time reference specifications. Currently, states differ in both definitions used and transition time references adopted.

- There is a compelling need to establish a preferred sequence, or hierarchy, of placement destinations. Otherwise, a state can, in principle, report a single high percentage figure indicating that almost all vocational and technical education students who received a high school diploma or its equivalent in a reporting cycle had enrolled in postsecondary education, were employed, or had enlisted in the military. The Core Indicator cannot be changed, for now, but OVAE and the states can collaborate in the development and adoption of additional descriptors of these transition destinations, including insights about combinations of these transitory destinations.

- It is reasonable to believe that members of Congress, their staffs, and the public assume that virtually all secondary vocational and technical education completers who receive a high school diploma or its equivalent will make the transition to a job or enroll in postsecondary education or advanced training. Minimal satisfaction of any one of these transition goals cannot be considered a serious outcome achievement without more information about the qualitative attributes of the employment, postsecondary education, or advanced training status in question

- A growing number of states are using administrative records to document placement, but others continue to rely on follow-up surveys of differing quality. Administrative record coverage limitations are understood. Questionnaire design, sample specification, and survey administration deficiencies are also well documented. Neither data collection approach is perfect. Awareness of how to improve the quality of each method is growing.

Anderberg and Pfeiffer (1998) and Stevens and Shi (1996) cover many of the conceptual and practical challenges that are encountered when administrative records are used to document employment status. Stevens (forthcoming) provides detailed legal definitions of the basic categories of employment that are not found in State Unemployment Insurance Wage Records. Also see the Florida Workforce Education and Outcome Information Services unit website (http://www.firn.edu/doe/weois/index.htm).

The most important of these omitted types of employment is independent contractors. U.S. Department of Labor's (2000) ***Independent Contractors: Prevalence and Implications for Unemployment Insurance Programs*** is a useful reference source.

Another important category of employment that is not found in State Unemployment Insurance Wage Records is federal government civilian employees and military personnel. The absence of a single national gateway for state access to federal civilian employee and military personnel data remains frustrating and expensive. This issue continues to be negotiated among federal agencies that are responsible for potentially impacted data collection systems. For example, the Administration for Children and Families, Office of Child Support Enforcement, Department of Health and Human Services manages an Expanded Federal Parent Locator Service that includes a National Directory of New Hires.

The National Directory of New Hires contains three types of information:

1. Employment data on newly hired employees submitted by State Directories of New Hires and by federal agencies

2. Quarterly earnings information obtained from state unemployment insurance agencies and from federal agencies

3. Unemployment compensation claims data provided by state unemployment insurance agencies

The purpose of the National Directory of New Hires is to be able to find information quickly about parents with child support obligations who are residing or working in other states. This expanded electronic file builds on years of state experience in conducting cross-matches between state child support locate requests and State Employment Security Agency data files—the original Federal Parent Locator Service initiative that began in 1990. Beginning in October 2001, the National Directory of New Hires will be used to calculate the employment and earnings performance indicator values for High Performance Bonus award purposes for the Temporary Assistance for Needy Families program under the *Personal Responsibility and Work Opportunity Reconciliation Act of 1996*. This precedent for expanded use of the National Directory of New Hires has renewed requests from other federal agencies, including the Department of Education and the Department of Labor, to be granted similar access for cost-effective calculation of required core indicators of performance.

State collection of out-of-state employment information is currently haphazard. The quality of out-of-state coverage in locally initiated student follow-up surveys is uneven. States that use State Unemployment Insurance Wage Records typically request access to their own state's data only.

Some states have entered into regional UI wage record sharing agreements that add limited coverage beyond a state's own borders. There is active discussion among federal agencies concerning possible future access to the Wage Record Interchange System (WRIS) hosted by the National Association of State Workforce Agencies (NASWA). The NASWA website

(www.naswa.org) is a useful source of up-to-date information about the WRIS; choose "WRIS Watch" from the topic menu.

OVAE must exercise careful oversight of state and local efforts to find as many former career and technical education students as possible, so they can be included in the numerator of the "placement in employment" subindicator under *Core Indicator Three*.

First-time expanded coverage of data sources is expected to find new subpopulations of former students, such as by adding interstate matches of State Unemployment Insurance Wage Records or carrying out a match against Office of Personnel Management records to locate former students who are federal civilian employees. This will look like performance improvement in a year-to-year comparison, unless care is exercised to require the same specification of data sources in the benchmark and current reference years.

Combinations of data sources that cannot be linked using a common identifier are likely to result in some duplication of "placement in employment" reporting. State Unemployment Insurance Wage Records are linked to student records using a social security number identifier. Survey results may not contain this identifier. Therefore, a summing of these two sources of "placement in employment" information would be expected to result in duplication in some cases. Selected audits of such circumstances, using other identifying information, can help to estimate the importance of this measurement problem.

OVAE staff, and their Employment and Training Administration counterparts in the Department of Labor, can conduct or commission studies of the year-to-year variation in record match rates found in particular data sources. If a high level of stability in match rates is found, this evidence might be used to require less-than-annual data collection using some sources of "placement in employment" information.

For example, if the percentage of former students in a reference cohort who are found in the Unemployment Insurance Wage Rates maintained by other states remains essentially constant over time, then this percentage might be transformed into a cost-effective adjustment factor that can be used for, say, 3 years, instead of encouraging annual collection from this source.

The effort that is made to find "everyone," and the costs associated with such an intensive effort, ultimately must be justified on the basis of what this effort contributes to customer needs for performance indicator information. One expected return on investment is that a high "placement in employment" figure will lower the probability of an unfavorable comparison with other states. However, offsetting this presumed benefit is awareness that a high "placement in employment" figure this year becomes the benchmark for calculating future continual progress.

Sampling remains a necessity in some states, when student social security numbers are not available to be used for linkage with State Unemployment Insurance Wage Records, or when these records are not accessible for other reasons. There is a new criterion to consider when sampling designs are developed. Linkage of secondary and postsecondary data files, and interest in linkage of these with WIA Title I and Title II participant records, introduces a longitudinal perspective to data collection and maintenance. This time horizon is a serious challenge to the ease of selecting a sample of students from a cohort of high school concentrators or completers.

Beyond core indicator reporting, interest has been expressed in tracking high school career and technical education students for years, as they flow in and out of postsecondary education and employment affiliations. An adequate sample size to satisfy immediate core indicator reporting is unlikely to suffice for long-term follow-up purposes.

There is a tradeoff that has not been examined in most performance measurement forums. Evaluation funds can be spent in an attempt to find "everyone" or at least some of these funds can be redirected to development of a more detailed description of the employment circumstances of a representative subpopulation of the reference cohort of former students.

A high return on investment from redirected funds would be expected. Many of the customers identified in figure 1 (p. 25) want to know how former career and technical education students have fared with respect to challenging job assignments, promotion and continued learning opportunities, earnings gains over time, and benefits coverage.

Ultimately, the convergence momentum sought by OVAE through its ***Core Indicator Framework*** and Peer Collaborative Network should be motivated by a federal-state consensus about what customers want to know about the employment of former vocational and technical education students.

The Definition and Measurement of Postsecondary Core Indicators

The issues covered in the previous seven subsections are just as applicable to postsecondary measurement as to the secondary indicators addressed. An important difference between secondary and postsecondary is the latter's challenge to identify a cohort of students for measurement purposes. The difference is one of degree only, because secondary students also enter and exit career and technical education courses in diverse patterns.

The concepts of "placement in employment" and "retention in employment" are particularly limiting with respect to postsecondary performance measurement. Most postsecondary students work part time while enrolled. Some remain affiliated with one of these employers after leaving school. The issue of interest for many customers of performance data then becomes descriptors of the quality of employment, not just the status of being employed.

Continual Improvement

A key phrase in the ISO quality management principle of continual improvement is "establishing goals to guide, and measures to track, continual improvement." This is a fundamental purpose for the OVAE Data Quality Initiative and Peer Collaborative Network, to negotiate quantifiable goals with each state and then hold the state accountable for valid and reliable measurement of progress toward these goals.

Measurement of continual improvement requires a basic level of stability or continuity in the management information systems relied upon to provide repeated measurement of agreed upon performance indicators. Changes in data element definitions, in the timing of data collection,

in the methods used to obtain data, and in quality control practices represent a potential threat to the integrity of continual progress calculations.

OVAE staff and their state partners in Perkins III performance accountability, as well as ETA staff and their state partners, face a difficult challenge. Each team of partners is making a serious effort to achieve continual improvement of performance measurement. But changes in measurement practices can interfere with an accurate measurement of continual progress of performance itself. There is a virtual certainty that the *No Child Left Behind Act of 2001* and periodic changes in state performance indicator systems will combine to make it very difficult to track Perkins III performance indicator trends.

Taking Action Based on Factual Analysis

The subheading is a phrase from the ISO quality management principle a factual approach to decision making. A similar phrase, "selection of indicators and evidence of their use and effectiveness in daily operations," appears in the Baldrige National Quality Program Education criterion "information and analysis." Each of these criteria of quality management takes one step beyond the OVAE Data Quality Initiative. The OVAE Initiative concentrates on continual improvement of performance indicator definitions, data collection practices and quality control steps. The linkage of better performance data with better management of vocational and technical education is a basic component of the Peer Collaborative Network and the technical assistance forums convened by OVAE. However, collection and dissemination of evidence of use and effectiveness in daily operations are beyond the explicit scope of the Data Quality Initiative per se.

It is important to highlight another phrase from the ISO principle a factual approach to decision making—"making decisions and taking action based on factual analysis, balanced with experience and intuition." Quality management does not emerge from unquestioning allegiance to quantitative performance data alone. This is one reason why the core indicators are described as minimal required evidence of performance.

The Remaining Quality Management Principles

Six ISO quality management principles have not been covered to this point—customer focus, leadership, involvement of people, process approach, system approach to management, and mutually beneficial supplier relationships. The focus of each of these principles has been touched upon throughout this chapter's description of the OVAE Data Quality Initiative.

There has been a direct "customer focus," although this has highlighted the requirements for state reporting to the U.S. Department of Education, with relatively little attention by the OVAE-state partnership to other customer needs and preferences for data definitions, quality, timing of availability, format, and cost. These considerations are not part of the mission of the federal-state partnership. Having said this, the Peer Collaborative Network established by OVAE and the states is designed to promote frequent sharing of state and local successes in responding to customer needs for performance information.

OVAE, some states, and some stakeholder representatives have exercised leadership in the implementation of the Perkins III accountability systems. Another phase of leadership will be required when the consequences of performance indicator availability are expected to occur.

The OVAE-state partnership, the forums hosted by OVAE, and the Peer Collaborative Network demonstrate a commitment to the involvement of people criterion for quality management. OVAE and state actions with regard to the "process" and "systems" approach criteria for quality management are described in detail in this chapter.

The "mutually beneficial supplier relationships" criterion for quality management refers to a quid pro quo environment in which OVAE requires certain actions from the states to meet its reporting responsibilities, and the states, in turn, express their needs and constraints in collecting performance information.

Beyond the Core Indicators

Beginning in the mid-1990s, Jay Pfeiffer, Chief of the Bureau of Workforce Education and Outcome Information Services in the Florida Department of Education, began to describe his responsibilities as falling into three tiers of performance measurement:

1. **Tier One** is composed of only the federal core indicators, which remain in parallel silos labeled Perkins III, WIA Title I, WIA Title II, WIA Title IV, TANF, etc.

2. **Tier Two** includes these core indicators, complemented by other state-specific required indicators.

3. **Tier Three** includes the federal and state required indicators, plus other state and local discretionary indicators.

This has come to be known as the wedding cake visualization of performance measurement, because Tier Three includes more indicators than Tier Two, which in turn includes more indicators than Tier One. The robust set of required and discretionary indicators found in Tier Three is a necessary solid foundation that supports the lighter (i.e., more limited) upper tiers.

The ISO quality management principle "taking action based on factual analysis" focuses attention on Tier Three indicators. From a state and local perspective, collection of the information needed to enter denominator and numerator values for core indicator calculations is a Tier One exercise undertaken for someone else—OVAE. Local satisfaction of state reporting requirements can be described in the same way, as a Tier Two data collection and processing activity undertaken for someone else—the State Department of Education. Data elements that appear only in Tier Three are not there to satisfy someone else's information needs. These are optional, or discretionary. They can be added or deleted, depending upon state and local needs.

Employment of former students is used here to illustrate the three-tier approach to collection and use of performance information.

Tier One

The core indicator is "placement in employment." The numerator value, employment, might be measured by use of State Unemployment Insurance Wage Records, if student social security numbers are available, or through use of a mailed or telephone survey instrument. All that is needed is documentation that a former student was employed during a specified time interval—say, during the second quarter following the former student's reference date of completion (or graduation).

If a student's reference date is June 2001, the follow-up quarter would be 2001:4, or the October-December 2001 quarter. If the former student's social security number is found in the state's Unemployment Insurance Wage Record file for the 2001:4 quarter s/he is counted as employed in the numerator of the *Core Indicator Three* value. Or, if a former student self-reports that s/he was employed during the reference months in responding to a mailed or telephone survey question, s/he is counted as employed.

The Tier One federal reporting requirement has been met. Documentation of "placement in employment" has been achieved.

Tier Two

Some states still use "placement in training-related employment" as a performance indicator. The training-related part of the definition goes beyond the federal "placement in employment" requirement. This information cannot be obtained from State Unemployment Insurance Wage Records (except in Alaska).

There is no consensus about the definition of "training-related employment." My view is that changes in business personnel practices and enrollment patterns in career and technical education combine to render the concept of training-related employment unreliable.

Narrowly defined occupations with a clear specification of incumbent responsibilities have, in many cases, given way to broad definitions that reflect expectations of on-demand problem detection and resolution. At the same time, movement of a cohort of students through an identical curriculum has been replaced by multiple paths reflecting different student objectives. Together, these trends have resulted in greater diversity of preparation and less similarity of employment circumstances.

Some states have substituted an industry code for occupational information because industry information is available from a State Employment Security Agency. This approach is challenging for multiple reasons.

1. The industry code is usually not found in the state agency's Unemployment Insurance Wage Record file, so a request for this information increases the burden and cost of satisfying the request.

2. States are now in the process of switching from long-standing use of a Standard Industrial Classification (SIC) coding taxonomy to a new North American Industry Classification

System (NAICS) taxonomy. The NAICS substitutes a five-digit coding scheme for the SIC four-digit format. SIC major group code 73, Business Services, is split into multiple codes in the NAICS format. SIC major group code 58, eating and drinking places, which was in the retail trade division, will no longer be in retail trade.

These, and other, changes must be understood by states that have been using the SIC coding format. From a value-added perspective, what customer need does the resulting information satisfy?

3. The connection between industry and evidence of training-related placement may be tenuous. Consider SIC Division I, Services; Major Group 80, Health Services; Industry Group code 805, Nursing and Personal Care Facilities; Industry 8059, nursing and personal care facilities not elsewhere classified. Assume that a former student completed a career and technical education program under the 1990 Classification of Instructional Programs (CIP) Series 51, health professions and related sciences; code 51.07, health and medical administrative services.

   What level of SIC and CIP coding should be selected to decide whether employment is training related? The SIC Division level—Services—is too high a level of aggregation, and the four-digit level, nursing and personal care facilities not elsewhere classified, is much too detailed for this intended use. At the two- or three-digit level of SIC coding, there is no direct link between employment in a nursing and personal care facility and confirmed use of skills learned in a health and medical administrative services program.

   The health services example was chosen because there is a high probability of training-related relevance. But many other possible pairings of SIC and CIP codes are less straightforward.

   The criterion for relevance used by one state is if a relevant Occupational Employment Statistics (OES) code appears in the staffing pattern of an industry. The OES code is used by a State Employment Security Agency to collect occupational staffing information from employers.

   In this case, a former student's actual occupational assignment is not known. An expedient assumption is made. If some reporting firms in the retail trade industry employ electricians and a former student has completed a program in CIP code 47.01, electrical and electronics equipment installers and repairers, and that former student is found in State Employment Security Agency administrative records as employed in the retail trade industry sector (SIC codes 52-59), then this will be considered a training-related placement.

Another state has used historical data and past training-related employment assignment decisions to develop a crosswalk between career and technical education programs and occupational information obtained from employers who hired completers of these programs. This software handles routine traditional occupations that have been reported in the past, but new occupational titles must be assigned a code and then a training-related decision must be made.

Regardless of the decision-making criteria adopted by a state, the underlying issue should be how to define validity and reliability for a training-related employment indicator. Why is the customer asking for this descriptor? There are two likely reasons when the customer is a state department of education:

1. The descriptor is a core indicator defined in state legislation.

2. The descriptor is thought by the department staff to be a valid indicator of a former student's use of the academic and technical skills, providing evidence of an immediate payoff on the investment made to provide the educational opportunity.

A different threshold level of measurement quality applies to each of these purposes. The core indicator requirement in state law might be satisfied by relatively inexpensive, but reliable, sample data, not necessarily collected every year. The evidence of an immediate payoff criterion requires more detail if the intended use of the information is to gauge whether the academic and technical skills offered are appropriate and sufficient.

The statutory requirement provides legislative advocates with performance information that is needed to promote continued and higher levels of investment in career and technical education. The strategic management use of information supports routine monitoring of the alignment of program offerings with employer expectations.

An important conclusion at this point is that a higher level of measurement quality is required for strategic management uses of performance information than for core indicator use of the data. The core indicator is a macro, or broad-brush use, whereas strategic management decisions are micro, or special purpose motivations for information use.

The conclusion reached about different demands for performance measurement precision is of particular importance with regard to the "placement in employment" indicator. Recall that the purpose of Perkins III is "to develop more fully the academic, vocational, and technical skills of secondary students and postsecondary students who elect to enroll in vocational and technical programs."

Core Indicator One (academic and technical skill attainment) and *Core Indicator Two* (diploma, credential and degree attainment) are direct gauges of success in the pursuit of continual progress in the development of these skills. *Core Indicator Three* (placement in further education, advanced training, the military and employment) is an indirect measure of the use of these skills.

The Perkins III conclusion does not apply to the core indicators for WIA Title I and Title II. The purpose of WIA Title I is "to provide workforce investment activities...that increase the employment, retention, and earnings of participants."

Employment is a direct indicator of WIA Title I performance. Similarly, the purpose of WIA Title II is "to assist adults to become literate and obtain the knowledge and skills necessary for employment and self-sufficiency."

This casts employment as a more direct indicator of performance than the Perkins III *Core Indicator Three*, but less direct than the WIA Title II core indicator.

Ultimately, an important performance measurement system design question becomes: How much do I want to invest in a particular indicator to achieve a desired level of quality (i.e., reliability) with respect to a customer's need for performance information?

Tier Three

The Tier One and Tier Two indicators must be prepared. The customers for these are federal and state agencies. The indicators are required by law or by administrative edict. Definitions for these indicators are given to data collectors and processors. Measurement quality standards are negotiated with the superior authority. Tier Three responsibilities are totally discretionary and remain at the state and local levels.

Typical customers for Tier Three information include lay members of school boards, constituent advocacy groups that often represent particular gender and ethnicity interests, media representatives, parents, and students. Their questions, individually and collectively, focus on descriptors of employment quality. Employment status *per se* is relevant—do completers of a given career and technical education program find jobs? And training-related employment might also be of interest—if my daughter completes this career and technical education program, can she expect to find a job using the new knowledge and skills?

But earnings profiles over time, stability of employment opportunity, promotion paths and probabilities, descriptors of compensation packages including benefits received, and job satisfaction, for particular subpopulations, are of equal or greater importance to satisfy customer requests for performance information.

Reluctance to invest in collection of these kinds of employment descriptors is expressed by those who think that educational performance responsibility should end at the point of knowledge and skill attainment, not subsequent use of these new competencies, which is subject to forces over which the educators exercise little control. The purpose stated in Perkins III lends support to this point of view. But this has no bearing on the flow of questions from customers. Their interests in performance information are not limited to the purpose of the act.

The OVAE Peer Collaborative Network is one attractive medium for the exchange of information about Tier Three data collection activities. Some of the customer questions to be answered are easily described:

- How have the young and sometimes not so young people who completed a secondary or postsecondary career and technical education program fared in the workplace?

- What distinguishes the program completers who "make it" in the world of work from those who do not succeed?

- What pairings of secondary academic and technical skill preparation with postsecondary academic and technical skill acquistion offer particularly attractive opportunities for students?

Caution is urged in responding to appeals that persistent labor shortages exist in particular occupations. This is a complex issue that cannot be adequately addressed here, but the cautionary warning is expressed because there are many definitions of a labor shortage, clear evidence of a shortage is often missing, others may also be responding to an alleged shortage, and many forces can eliminate an imbalance before an educational response plays out.

Opportunities to improve performance through adoption of improved performance measurement practices are most likely to emerge from increased attention to Tier Three discretionary indicators. These are the indicators that are most likely to translate into strategic action responses.

One exception to this strong statement is state performance-based funding that depends, at least in part, upon core indicator values. However, the recent history of the use of such funding criteria suggests that it is difficult to sustain a critical mass of political support for reliance on quantitative performance information. The availability of reliable performance information reduces the power of those who advocate resource allocation based on other criteria.

What, then, can be said about the future of vocational and technical education and work force development accountability? How might 21st-century accountability differ from the 20th-century practices described in chapters 3 and 4? Answers to these questions are offered in chapter 5.

The Future of Performance Measurement in Perkins III and WIA Title I and Title II

This concluding chapter returns to four basic criteria for high-quality outcome-based performance measurement:

1. A clear goal statement
2. Valid and reliable measurement
3. Standards adjusted for "relevant" differences in circumstances
4. Performance-based consequences

A fundamental requirement before undertaking the design of a high-quality performance measurement system is to ensure that there is a consensus that a practical capability exists to connect reliable measures of program activities to reliable indicators of performance. Stakeholders can disagree about program goals and performance indicators. All that is needed is agreement that relevant program activities and reliable performance measures can be linked in a practical way.

A Clear Goal Statement

The layers of management responsibility and data collection and processing illustrated in figure 1 highlight the unavoidable fact that different customers for performance information are likely to focus on different goals for vocational and technical education and work force development. A particular module of a performance measurement system can be designed to address each goal. Overlap and definitional frictions among modules can be identified and reconciled in the design activity. This is not a one-time requirement at the outset. Module redesign and reconciliation will be necessary each time new customer needs are identified and accepted as a performance measurement system responsibility.

Valid and Reliable Measurement

A short list of core indicators is unlikely to satisfy a diverse population of performance information customers. Consensus about validity is less likely to be reached about macro indicators, such as academic and technical skill attainment, or placement, than about micro indicators, such as student attainment of industry-validated skill standards for a particular career and technical education program offered in a specific location at a designated time.

Lags in the availability of some performance information, an absence of benchmark data for some measures, and the cost and administrative burden of establishing and maintaining linked longitudinal files limit the practical feasibility of adopting some preferred valid indicators of performance and aggressively pursuing professional standards of measurement reliability.

A particularly difficult challenge faced in the refinement of performance measurement systems is the need to define before and after points in time that are consistent with the validity and

reliability criteria. Descriptors of "before" status are needed to calibrate a performance measurement calculation—what relevant descriptors are needed to describe a student's academic and technical skills before beginning a given career and technical education program? Descriptors of "after" are needed to place a former student's academic and technical skills and skills use in a proper context of influences other than the given career and technical education program. These descriptions of before and after assume that there is a practical way to define and record the timing of program entry and exit. The OVAE-state partnership has defined participants, concentrators, completers, and completers who graduate as a practical way to define before and after. WIA Title I regulations define "hard" and "soft" exit dates; the former being event-triggered by a documented transition from program participation to another status, whereas the latter is defined by the absence of a relevant action within a designated time period.

The need to report to a higher authority within a short period of time limits a program manager's flexibility in selecting and defining valid and reliable performance indicators. The Secretaries of Education and Labor must report to Congress annually, and each faces reauthorization deliberations in 2002 and 2003. Some states face similar reporting and legislative sunset circumstances. These reporting schedules and cycles threaten the consensus-building process among levels of management responsibility and data collection and processing. There are serious constraints on federal, state and local capabilities to link valid and reliable before, during, and after measures of performance for programs affected by 1998 legislation. Reliable linkage of action and consequence is difficult, even without the added burden of an artificial criterion of annual reporting and transmittal of comprehensive assessment information by mid-2002.

A tension cannot be avoided between continual improvement of performance measurement and reliable measurement of continual improvement of performance. Reliable documentation of performance improvement requires before and after measurement using the same indicator definitions. Refinement of definitions, or changes in the quality of performance information collected, drives a wedge between the before and after measurement values.

Standards Adjusted for "Relevant" Differences

Core indicators of performance are intended to be transparent, i.e., easily and correctly understood by a nonexpert. Any adjustment of core indicators compromises this criterion. Adjustments are needed for equity of treatment reasons. Therefore, the design of a Tier Three module for a comprehensive performance information system should include the definition of adjustment factors. These should not appear in the Tier One and Tier Two modules, where transparency and conformity with federal and state definitions is required. The availability of adjustment indicators in Tier Three enables those who are interested to compare raw core indicator calculations with adjusted indicator values. The findings from this comparison can then be used for advocacy and negotiation purposes.

Performance-based Consequences

Public disclosure of core indicator information, without adjustments, will be an unstable justification for outcome-based actions to reward or punish program managers. The availability of

complementary state and local Tier Three descriptors will improve the quality of federal-state and state-local negotiations in the vocational and technical education and work force development spheres.

Federal and state authorities have exhibited an understandable reluctance to base funds allocation decisions on quantitative evidence of outcomes-based performance. The reluctance is understood because the core indicator framework is meager. States such as Florida that have taken a bold approach to performance-based funding of some components of the state's portfolio of education programs are experiencing the inevitable tension between performance-driven allocation criteria and the expression of other interests by parties that cannot be shut out of the process.

The availability of reliable Tier Three descriptors increases the management leverage maintained by education and work force development authorities. This assumes, of course, that there is a general consensus about the appropriateness of the descriptors, i.e., that they are valid measures of performance.

The Reality of Devolution

The nation's vocational and technical education systems are different in many fiscal and management authority respects. However, these systems are similar in one important respect—each depends upon local and state collection of performance information. There has been more top-down control of the WIA performance measurement process to date than is observed in reviewing the OVAE-state performance measurement partnership activities. Nevertheless, each of these hierarchies of data collection and processing incorporates a healthy recognition that *common* definitions of performance indicators do not require uniform management information systems in each locality.

State and local performance information systems existed before Perkins III and WIA, and they will continue beyond the sunset dates of each of these acts. The vocational and technical education and work force development modules of these information systems must interact with other components of larger management information systems. Sometimes, changes in the vocational and technical education or work force development modules trigger necessary changes in the other components. More often, changes in other components have consequences for the ease, and even the feasibility, of sustaining the status quo in the vocational and technical education and work force development modules. The *No Child Left Behind Act of 2001* is expected to be an immediate example of this influence.

Changes in public attitudes about access to social security numbers can create or destroy opportunities to use administrative data sources as a cost-effective way to collect reliable longitudinal performance information. These changes can be sudden and are almost always unrelated to vocational and technical education and work force development performance measurement issues.

A Final Thought

Nearly a half-century ago, Arthur Ross, a University of California at Berkeley professor of industrial relations, coined the phrase "orbits of coercive comparison" to describe how successful negotiation of attractive gains by one union often resulted in similar gains by other unions. The characterization of this comparison as coercive arose from recognition that the comparison could not be avoided or ignored.

Orbits of coercive comparison are emerging among the states as WIA Consumer Reports System information begins to flow to the public. Other orbits of comparison will become more apparent as state annual reports to OVAE are released.

Unlike a "corrosive" effect, which describes deterioration or an eating-away process, a "coercive" effect is a healthy market phenomenon—awareness of a higher-quality performance measurement system elsewhere creates pressure to emulate, or better yet, leapfrog this new plateau of performance measurement quality.

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